BRILL'S STUDIES IN INDO-EUROPEAN LANGUAGES & LINGUISTICS

The Prehistory of the Balto-Slavic Accent

Jay H. Jasanoff

I.

Ant Pirmos Nedelos Adwento S. Ewangelia ape Adwenta / táy yrá/ ape ataiima Wieszpaties Christaus/ ir ytoiima ant Karalistes sawos. Mathusiep Swiciu Deszymtu Pirmoi Cap.

Nuometu: Kad ártinos Jerosolimop/ ir atáio ing Betphage/kálnop aliwu: tad Jésus núsiunte du mókitiniu/bilódamas iie mus: Eikite ing miestéli/kuris yrá priesz ius: ir zdrag rásoite asiliczia pririszta/ir asilaity su iá/ atrisze atwéskite mań iůs. O iki iúmus kas ka tario/pasoakikite/iog iu Wieszpats priwâlo: ir tůiau paláis iůs. O tai wissa tikos/ idant iszpildirus/kas tarita yrá per Prânaszą bilanti: Pasoakikite dukteri Siôno: sztái Karâlus táwas eit tawi rômus ir sédis ant asiliczios/ir asilaiczio sunáus paiúgémos. Nuéie tada mókitinei/ padáre káip iiémus búwo insákes Jesus/ir átwéde asiliczia ir ásilaiti/ ir vżdéio ant iu rubús sawús/ ir vżsodino ii ant iu. Ominiá dide kłóio rubús sawús ant kelo. O kiti wel kapôio szakás nůg medżiu/ ir kłóio ant kielo: o minios kuriós pirma éio/ ir páskui sekie/ szauke bilódamos: Hosánna sûnui Dowido. Paláimintas kuris eit ing wárda Wieszpaties/ Hosánna ant aukszibiu.

Marci. 11. Luce. 19.

Esaie. 62. Zach. 9. Joan. 12.

Psal. 117.

IZGVLDIMAS.

Rom. 10.

a

sawo su

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By

Jay H. Jasanoff

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The Library of Congress Cataloging-in-Publication Data is available online at http://catalog.loc.gov
LC record available at http://lccn.loc.gov/2017019544

Typeface for the Latin, Greek, and Cyrillic scripts: "Brill". See and download: brill.com/brill-typeface.

ISSN 1875-6328
ISBN 978-90-04-34609-3 (hardback)
ISBN 978-90-04-34610-9 (e-book)

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Preface

This book has been written to fill a gap. Balto-Slavic accentology is a thriving academic subfield with a well-defined set of concerns. Some of these are descriptive: how, in a given set of forms, do accent, tone, and quantity interact with segmental material? Some are theoretical: how should these interactions be modeled in a speaker-internalized grammar? And some are historical: how did the synchronic system(s) we see in the attested BSl. languages come about? This book, as its title implies, is concerned with questions of the third type. The historical side of BSl. accentology is not a neglected area. But historical questions come in different shapes and sizes. Anyone who peruses a Slavic linguistics journal, or who examines the proceedings of an annual International Workshop on Balto-Slavic Accentology (IWoBA), will quickly notice that the historical problems that engage the attention of professional BSl. accentologists on a day-to-day basis mostly center on relatively late phenomena in the individual languages, or in Baltic or Slavic alone, such as the rise of secondary intonational contrasts, the dialect-specific shortening of long vowels in various positions, or the accentual behavior of this or that group of *l*-participles. Topics of Balto-Slavic-wide scope, not to mention those that have to be studied in an IE context, are less popular. It is easy to see why. The accentological facts at the level of the individual BSl. languages and dialects are complex and absorbing. Philological evidence remains to be evaluated, and living speakers provide a constant stream of fresh dialect data that attracts researchers away from longer-time-span issues. As a result, the historically aware non-specialist who wants to learn in detail how Balto-Slavic differs from the rest of the IE family, and how it got that way, has few places to turn. The hopelessly inadequate Neogrammarian approach to BSl. accentuation was swept away over a half century ago by Stang (1957), but no consensus-inspiring historical theory has arisen to take its place. The major discoveries of the Moscow Accentological School since the early 1960's have yet to be incorporated into an acceptable historical synthesis. A detailed IE-based narrative has been put forth by Frederik Kortlandt and his school, but this is predicated on a set of assumptions that most Indo-Europeanists find untenable. The best recent book on the prehistory of BSl. accentuation, Thomas Olander's important 2009 study of accentual mobility, is stimulating and immensely useful, but not in the end convincing.

The ideal reader I imagine for this work is myself thirty years ago. As part of my regular duties at Cornell in the eighties and nineties, I occasionally taught an informal introduction to Lithuanian for Indo-Europeanists. Inevitably, my students would want to know about the IE background of Lithuanian

accentuation, and in the fall of 1989, when the students in question happened to be Michael Weiss and Thórhallur Eythórsson, both themselves now well-known researchers, I set out to give them an answer that went beyond my fragmentary understanding of the subject at the time. Since I found nothing satisfactory in print, I produced a five-page handout that I humorously titled "A Boy's Guide to Balto-Slavic Accentuation." The 1989 "Boy's Guide," full of received opinions interspersed with occasional small novelties of my own, was the remote ancestor of the present book. In the years that followed, my interest in the BSl. accent, which I found intriguing both as a problem in its own right and as a potential tool for shedding light on contested topics elsewhere in IE, remained fitfully alive. Later editions of the "Guide," written for later classes, corrected wrong ideas and added a few new ones; the 1996 version contained a recognizable precursor of my analysis of mobility in the verb, later published as Jasanoff 2008. Still, there might never have been a monograph-length publication had it not been for the contested aftermath to my short contribution to the Festschrift for the late Jens Elmegård Rasmussen (Jasanoff 2004; in reply Kortlandt 2004). From then on, what had been a casual hobby became a primary research interest, and the present work is the result.

The reader should be aware of what this book is and what it is not. My goal has been to provide an accentological interface between IE and Balto-Slavic—to identify and explain, without losing the proverbial forest for the trees, the accent shifts and other early changes that give the earliest stages of Baltic and Slavic their distinctive prosodic cast. I have not collected original data or tried to produce a handbook-style introduction to BSl. accentology, which would have been vastly beyond my competence. Bibliographical coverage is highly selective and reflects my background and orientation as an Indo-Europeanist. Late and language-particular developments are only exceptionally, and then fleetingly, discussed; readers wanting to know about, e.g., the shortening of pretonic vowels in Slavic or the dialectal distribution of tone distinctions in modern Latvian will have to look elsewhere. This is not to disparage or trivialize these questions, which deservedly occupy the attentions of specialists and would obviously merit extended treatment in a more encompassing work. But they are not what this book is about, reflecting my working assumption that when the answers are fully known, they will not force us to revise our understanding of the changes that marked the emergence of Balto-Slavic from PIE.

Since the material in the chapters that follow has been evolving since that first class at Cornell, it would be impossible to recognize all the students, friends, and colleagues who have helped bring it to the present stage. My first debt is to my friend and comrade-in-arms Michael Flier, who stood ready night and day to answer my questions on Slavic, and without whose aid and

encouragement this book could never have been written. More immediately, the finished draft was read by Marek Majer, who suggested valuable improvements and saved me from embarrassing errors. Among the many others who contributed to the finished product, whether or not they remember it now, were Henning Andersen, Gašper Beguš, Wayles Browne, Miguel Carrasquer Vidal, Thórhallur Eythórsson, Ben Fortson, Yaroslav Gorbachov, Craig Melchert, Alexander Nikolaev, Alan Nussbaum, Keith Plaster, Jeremy Rau, Kevin Ryan, Donca Steriade, Patrick Stiles, Miguel Villanueva Svensson, Brent Vine, and Michael Weiss. Needless to say, only I am responsible for remaining errors. Julia Sturm lent invaluable help with the bibliography section.

As with all my work, this book is indebted in many ways to my family, whose initial surprise that one could write a book on this topic never detracted from their love and support while it was underway.

J. H. J.
Cambridge, Mass.
June, 2017

List of Abbreviations

Av.	Avestan
BCS	Bosnian-Croatian-Serbian (“Serbo-Croatian”)
BSl.	Balto-Slavic
Čak.	Čakavian
Cz.	Czech
DAR	Derivational Accent Rule
Gk.	Greek
Hitt.	Hittite
IE	Indo-European
Lat.	Latin
Latv.	Latvian
Lith.	Lithuanian
NE	New English
NHG	New High German
OAv.	Old Avestan
OCS	Old Church Slavonic
OFris.	Old Frisian
OHG	Old High German
OIcel.	Old Icelandic
OIr.	Old Irish
OLith.	Old Lithuanian
OPr.	Old Prussian
OR	Old Russian
OS	Old Saxon
PIE	Proto-Indo-European
Pol.	Polish
Proto-VDL	Proto-Vasil’ev-Dolobko’s Law
PSl.	Proto-Slavic
R	Russian
Skt.	Sanskrit
Slk.	Slovak
Slov.	Slovenian
SPL	Saussure-Pedersen’s Law
Štok.	Štokavian
Toch.	Tocharian

Umbr.	Umbrian
VDL	Vasil'ev-Dolobko's Law
Ved.	Vedic
YAv.	Young Avestan
Žem.	Žemaitian

CHAPTER 1

The Indo-European Background

> *On ne peut rapprocher que les procédés généraux du védique, du grec, du baltique et du slave. Ces procédés concordent en gros; mais les divergences sont telles qu'il est impossible de reconstituer avec quelque détail l'état indo-européen.*
>
> MEILLET 1916: 79

Much has changed, and much has remained the same, since these pessimistic lines on the Indo-European (IE) accent were penned a century ago. As Meillet well knew, the "divergences" that stood in the way of a detailed reconstruction of the P(roto-)IE accentual system were not evenly distributed. The Vedic and Greek accents, after obvious changes are stripped away, are almost interchangeable. If it were our task simply to reconstruct a common accentual parent for these two languages—or of these two languages joined by Germanic and Hittite—there would be no need to speak semi-apologetically of "general processes." But Baltic and Slavic complicate the picture. To turn from Vedic and Greek, with their stable, columnarly accented paradigms, to Lithuanian or a conservative South Slavic language like Bosnian-Croatian-Serbian (BCS)[1] is to enter a different prosodic world, a world of rising and falling tones and a restlessly mobile accent unlike anything elsewhere in the IE family. Bridging the gap between the two worlds has proved to be one of the most challenging tasks in IE comparative grammar. Meillet was one of the first scholars to consider the possibility, marked but not in principle unthinkable, that Baltic and Slavic preserved an older state of affairs, accentually speaking, than Vedic and Greek. Never attractive, this option has lost such appeal as it may once have had in recent years. The progress of scholarship, both within Balto-Slavic (BSl.)[2] accentology proper and in the wider area of IE morphophonemics, has gradually removed the obstacles to an explanation of BSl. accentuation on the basis of the traditional Vedic and Greek-like system. Elaborating a theory along these lines will be the goal of the present work.

1 I use this term (and abbreviation) throughout for the more traditional "Serbo-Croatian (SC)."

2 The hypothesis of a BSl. intermediate common language is taken for granted in this book. The shared accentual innovations of the two branches are among the most telling proofs of their special relationship. I also assume, although nothing important will depend on it, that Letto-Lithuanian and Old Prussian form a legitimate clade "Baltic."

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1.1 Proto-Indo-European

1.1.1 *The Segmental Inventory*

As a point of reference for what follows, we can begin with a summary of the facts of PIE surface phonology as currently understood.[3] On the whole, the late nineteenth-century Neogrammarian picture of PIE, canonized in Brugmann's *Grundriss* (Brugmann and Delbrück 1897–1916) has stood the test of time fairly well. In the segmental inventory, the only major casualty has been in the stop system. Where Brugmann set up four series (voiceless, voiced, voiceless aspirated, voiced aspirated), modern practice, following Saussure, rewrites the voiceless aspirates (**t^h*, **k^h*, etc.) as clusters of voiceless stop + laryngeal (**t* + *h$_2$*, **k* + *h$_2$*, etc.). The voiceless, voiced, and voiced aspirated series (**d^h*, **g^h*, etc.) remain.[4] Efforts to reinterpret these in non-traditional terms—notably, the "glottalic" theory, according to which the voiced stops (**b*, **d*, **g*, etc.) were ejective or preglottalized—have attracted intermittent interest but have never been accepted into the mainstream.[5] A perennially contested feature of the Brugmannian stop system, the three-way distinction of "palatals" **ḱ*, **ǵ*, etc., "velars" **k*, **g*, etc., and labiovelars **k$^{\mu}$*, **g$^{\mu}$*, etc., has been confirmed by new discoveries in Anatolian.[6] The only ordinary fricative in the phonemic inventory was **s*, with an automatic voiced variant **z*. The traditionally reconstructed "thorn clusters" **ḱþ*, **k$^{\mu}$þ*, **g^{h}ð*, etc., containing a putative interdental fricative, are now known to have developed out of sequences of the type **TK* in the parent language.[7]

---

3 The standard presentation is by Mayrhofer (1986).

4 The traditional term "voiced aspirate" is retained here, even though the sounds in question, like their descendants in Hindi, Bengali, and other modern Indo-Aryan languages, were probably characterized by "breathy voice," a phonation type distinct from aspiration. See Ladefoged and Maddieson 1996: 57–63.

5 For the background of the glottalic theory see 3.3. The supposed typological advantages of starting from a glottalic-type stop system are more than offset by the much greater complexity of the developments that have to be assumed to get from PIE to the daughter languages. See, e.g., the discussions by Clackson (2007: 41–49) and Fortson (2010: 59–60). It is less problematic to argue for a pre-PIE glottalic system that gave way to the traditional system *within* the protolanguage.

6 The three-way distinction of tectals in Luvian was demonstrated by Melchert (1987). For the proposed interpretation of the *ḱ*-series as velars and the *k*-series as uvulars, see Kümmel 2007: 318–19 and Weiss 2014: 131–2.

7 The crucial evidence comes from Hittite and Tocharian, where the iconic "thorn" word Ved. *kṣam-*, Gk. *khthṓn* 'earth', traditionally reconstructed **ǵ^{h}þom-* or **ǵ^{h}ð$^{(h)}$om-*, is represented by *tēkan*, gen. *taknāš* (Hitt.) and *tkaṃ* (Toch. A), pointing to an amphikinetic stem **d^{h}égʰ-ōm*,

The Neogrammarians set up six sonorants or "resonants," each with a syllabic counterpart. Two of these were liquids (**r* ~ **r̥*, **l* ~ **l̥*), two nasals (**m* ~ **m̥*, **n* ~ **n̥*), and two glides (**i̯* ~ **i*, **u̯* ~ **u*). Although the Neogrammarians did not use the term (and did not fully appreciate the phenomenon), five of the syllabic : non-syllabic pairs were allophonic. The exception was the pair **i̯* : **i*, which had achieved phonemic status in PIE; there was a contrast, e.g., between **gʷʰédʰ-i̯e/o-* 'ask' (present stem) vs. **gʷʰédʰ-i(i̯)e/o-* 'to be asked' (gerundive).[8] The "long syllabic resonants" (**r̥̄*, **l̥̄*, etc.), a major complicating factor in Brugmann's system, have been replaced in the modern view, like the voiceless aspirates, by sequences containing a laryngeal (**r̥* + $h_1/h_2/h_3$, etc.).

The "laryngeal" consonants, the only major addition to the PIE phonological inventory since Brugmann's time, can only be discussed in conjunction with the vowel system. The Neogrammarians reconstructed five long and five short vowels (**ă*, **ĕ*, **ŏ*, **ĭ*, **ŭ*), along with a schwa (**ə*) that was always short.[9] The advent of laryngeals (three has become the standard number) eliminated the need for a separate schwa and led to the reinterpretation of some long vowels as older sequences of short vowel + tautosyllabic laryngeal. Laryngeals also made it possible to explain some instances of the vowels **a* and **ā* as the result of "coloration" of earlier **e* by a contiguous $*h_2$, and some instances of **o* and **ō* as the result of coloration of **e* by $*h_3$. But the word "some" in these statements is important. The exuberant hopes of some early laryngealists notwithstanding, it is not the case that the laryngeal theory eliminates the need for long vowels in PIE. Apart from the long vowels that were created by inner-PIE compensatory lengthening in final syllables ("Szemerényi's Law"; e.g., nom. sg. **ph₂tḗr* < ***-tér-s*), there is abundant proof that the lengthened-grade vowels **ē* and **ō* alternated productively with **e* and **o* in a type of ablaut unknown to the Neogrammarians (see below). Nor is there any justification for eliminating **a* and **ā*. In purely algebraic terms it is possible in any situation to write $*h_2e$ (or in many cases simply $*h_2$) for traditional **a*. Often this produces felicitous results, as in **h₂erǵ-* for **arǵ-* 'bright' (: Hitt. *ḫarki-* 'white') or the 1 sg. perfect ending **-h₂e* for **-a* (: Hitt. 1 sg. *-ḫi*). But sometimes it yields little more than an arbitrary concatenation of symbols, as in **sh₂el-* for **sal-* 'salt' or **kh₂p-* for **kap-* 'take'. In what follows, it will be our default position that PIE had the five

gen. **dʰǵʰ-m-és* (cf. 1.1.2, 1.4). The precise phonetic trajectory from **TK* to the reflexes in the daughter languages is a matter of discussion.

8 Cf. Mayrhofer 1986: 161. Relational adjectives in **-i(i̯)o-*, as opposed to **-i̯o-*, are common across the family; see 1.6.2 for examples.

9 I omit consideration of the non-phonemic "schwa secundum," which was inserted to break up clusters of the type *#C_1C_2R-*

ordinary short vowels **a*, **e*, **o*, **i*, **u*, the last of which was in allophonic variation with **u̯*. For the long vowels, we can at least assume that, corresponding to the **ē* of nom. sg. **ph₂tḗr* (and the **ō* of, e.g., **su̯ésōr* 'sister' < **-or-s*), the nom. sg. of a word like **sal-* had long **ā* (**sāl* < ***sal-s*). The evidence for a PIE **ī* or **ū* of non-laryngeal origin is at best marginal.[10]

1.1.2 *Accent and Ablaut*

PIE had a mobile word accent which could stand on any syllable and which, together with ablaut, was a major exponent of morphological meaning. The evidence of Vedic and Greek, where we have the testimony of ancient grammarians, suggests that the accent was primarily realized as a raised pitch on the targeted syllable. Unlike some of the later IE languages, PIE seems to have made no distinction between contrasting accent types (e.g., rising vs. falling), or between long nuclei with an accented first vs. an accented second mora. Factoring out transparent innovations on the Greek side (see 1.3), the Vedic and Greek accents match very closely: cf. Ved. *pitā́* 'father' : *bhrā́tā* 'brother' = Gk. *patḗr* : *phrā́tēr* (= OHG *fater* : *bruoder*);[11] Ved. *dyáuḥ* 'heaven' : gen. sg. *diváḥ* = Gk. *Zeús* : *Di*(*w*)*ós*; Ved. *rákṣas-* 'injury' : *arakṣás-* 'not injuring' ≅ Gk. *pseũdos* 'falsehood' : *apseudḗs* 'not lying'. When an accented **e* or **o* (> Ved. *a*) gives up its accent to another syllable in the course of inflection the de-accented vowel is often lost: cf. Ved. acc. sg. *pi̯tárам* : dat. sg. *pi̯tré* ≅ Gk. *pa̯térа* : gen. sg. *pa̯trós*; Ved. 1 sg. *émi* (< **ai-*) 'I go' : 1 pl. *i̯máḥ* = Gk. *eĩmi* : *i̯men*; Ved. 1 sg. *véda* 'I know' : 1 pl. *vi̯dmá* = Gk. (*w*)*oĩda* : (*w*)*ídmen*.[12] The deletion process in these and other forms—"zero grade formation," we will call it—is a family-wide phenomenon, as shown, e.g., by the widely distributed, synchronically irregular forms of the copula: Ved. 3 sg. *ás-ti* 'is' : pl. *s-ánti* 'are' = Hitt. *ēšzi* : *ašanzi*, Lat. *est* : *sunt*, OIr. *is* : *it*, Go. *ist* : *sind*, OCS *jestъ* : *sǫtъ*. The fact that zero grade appears in more or less the same words and grammatical forms around the family, even in languages like Italic and Celtic, where the inherited phonological accent has been lost, is *prima facie* evidence that the position of the accent in Vedic and Greek basically continues its position in the parent language.[13]

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10 Commonly cited cases are Lat. *ūrus* beside Ved. *vīṣá-* 'poison', and Lat. *mūs*, OE *mūs*, OCS *myšь*, etc. 'mouse' (if to Ved. *muṣṇā́ti* 'steal'); neither example is conclusive. PIE had no distinction between normal long and hyperlong vowels, such as later arose in the history of some of the individual branches.

11 With *-t-* ≠ *-d-* by Verner's Law; see 1.5.2.

12 With accent secondarily on the root by the Greek recessive accent rule (1.3.2).

13 It has been reasonably surmised that the PIE pitch accent developed out of an earlier stress accent, which would have been more likely than a pitch accent to trigger zero-grade

Cases like those above, in which an accented *e*- or *o*-grade "strong" stem alternates with an unaccented zero-grade "weak" stem, have figured as handbook examples for well over a century. Since the 1960's, other accent/ablaut patterns have been identified and shown to play an organic role in the system. "Narten" ablaut—the alternation of accented **é* (strong) with accented **ḗ* (weak)—is associated, *inter alia*, with non-mobile root presents of the type 3 sg. **stéu-ti* 'proclaims' : 3 pl. **stéu̯-n̥ti* ("Narten presents").[14] A class of root nouns described by Schindler in 1972, likewise with stable accent on the root, has **ó* : **é* ablaut (cf. nom. sg. **pṓd-s* (with secondary lengthening), acc. **pód-m̥* 'foot' : gen. **péd-s*).[15] The greatest diversity of accent/ablaut types is found in athematic nominal stems consisting of a root and a derivational suffix. Here, according to a widely accepted model of noun inflection that gained currency in the years after 1970, there were four original patterns:[16]

I. ACROSTATIC A: R(*ḗ*) – S(*z*) – D(*z*) : R(*é*) – S(*z*) – D(*z*)[17]
Ex.: nom.-acc. sg. **Hi̯ék*u̯-r̥-ø*, gen. sg. **Hi̯ék*u̯-n̥-s* 'liver'

ACROSTATIC B: R(*ó*) – S(*z*) – D(*z*) : R(*é*) – S(*z*) – D(*z*)
Ex.: nom. sg. **nók*u̯-t-s*, gen. sg. **nék*u̯-t-s* 'night'

II. PROTEROKINETIC: R(*é*) – S(*z*) – D(*z*) : R(*z*) – S(*é*) – D(*z*)
Ex.: nom. sg. **g*u̯én-h₂-ø*, gen. sg. **g*u̯n-éh₂-s* 'woman'

III. HYSTEROKINETIC: R(*z*) – S(*é*) – D(*z*) : R(*z*) – S(*z*) – D(*é*)
Ex.: nom. sg. **u̯r̥s-én* < **-én-s*, gen. sg. **u̯r̥s-n-és* 'male'

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formation. Be that as it may, zero-grade formation was long since extinct as a living phonological process in the late protolanguage, as shown by the numerous cases where a zero-grade syllable is accented (e.g., **septḿ* '7') and a full-grade syllable is not (e.g., **dei̯u̯ó-* 'god'). The pitch accent described by the Greek grammarians reverted to being a stress accent in the early Byzantine period and has remained so in Modern Greek.

14 After Narten 1968, where this type of alternation was first described.

15 See Schindler 1972, a condensed version of the author's Würzburg dissertation of the same year.

16 Fuller expositions of the so-called "Erlangen" model are available in modern handbooks such as Clackson 2007: 79–86, Weiss 2009a: 257–61, Fortson 2010: 119–22, and Meier-Brügger 2010: 203–220. For many years the system was accessible only in specialized articles and in Rix 1976: 123–6, the first major handbook to incorporate it.

17 R(*ḗ*) = accented *ē*-grade root syllable; S(*z*) = zero-grade suffixal syllable; D(*z*) = zero-grade desinential syllable; etc.

IV. AMPHIKINETIC (= HOLOKINETIC): R(*é*) – S(*o*) – D(*z*) : R(*z*) – S(*z*) – D(*é*)
Ex.: nom. sg. **pént-oh₂-s,* gen. sg. **pn̥t-h₂-és* 'path'

The categories "acrostatic," "proterokinetic," etc. eliminate much of the analytic need for the traditional classification of nouns and adjectives into "*r*-stems," "*u*-stems," etc. at the IE level; there is no basic difference between, e.g., the hysterokinetic *r*-stem **ph₂tḗr*, gen. **-tr-és* and the hysterokinetic *n*-stem **u̯n̥s-én*, **-n-és*, or between the acrostatic *t*-stem **nókᵘ-t-s*, **nékᵘ-t-s* and the acrostatic *i*-stem **h₁ógᵘʰ-i-s*, **h₁égᵘʰ-i-s* 'serpent'. As emphasized by the originators of the model, however, the four accent/ablaut types represent an ideal system that had ceased to be fully operational by the end of the IE period. In actual fact, the alternations in root vocalism proper to types I, II, and IV, and the accent movements proper to types II and IV, are only very rarely encountered in the same word in any individual daughter language, having been lost through leveling in late PIE and the early history of the individual branches.[18]

Verbal stems show less variety than nouns, partly because ablauting suffixes are a rarity in the verbal system.[19] Here too, however, there are novelties vis-à-vis older twentieth-century descriptions. Narten presents have already come up for mention. Another fixed-accent present type, represented by Lat. *molō*, Lith. *malù*, and OIr. *melid*, all meaning 'grind', had **o* : **e* ablaut, like the root noun type **pód-* ~ **péd-*.[20] Immobile root accent, coupled with either Narten

18 But it must be stressed that every one of the four types is attested, or as good as attested, in an actual paradigm somewhere in the IE family. Hysterokinetic inflection is still preserved in high-profile words in Indo-Iranian and Greek (cf. nom. sg. *pitā́*, acc. *pitáram*, dat. *pitré*; Gk. *patḗr*, *patéra*, gen. *patrós*). The more elaborate amphikinetic type is seen in Hitt. *tēkan*, gen. *taknāš* (cf. note 7) and Ved. *pánt*(*h*)*āḥ* 'path' (cf. OAv. *pantå*), gen. *pathā́ḥ* (OAv. *paθō*). Hitt. *wātar* < **u̯ód-r̥*, gen. *úetenaš* < *u̯éd-n̥-s* maintains the defining **o* : **e* root ablaut of the second acrostatic subtype, although the zero-grade suffix has been replaced by a full grade originally proper to the loc. sg. (**ud-én*), which was formed by a special subrule. Even the proterokinetic type, the existence of which has lately been questioned on theoretical grounds (see 1.7.2 below), is unequivocally attested in OIr. nom. *ben, bé* < **gᵘén-h₂*, gen. sg. *mná* < **gᵘn-éh₂-s*.

19 Strictly speaking, there is really only one ablauting suffix in the system of the finite verb—the optative suffix **-i̯eh₁-* ~ **-ih₁-* of OLat. 1 sg. *siem*, pl. *sīmus* and similar forms. The only other ablauting tense-aspect-mood marker is the present-stem-forming nasal infix **-né-* ~ **-n-*, which by resegmentation gave rise to a quasi-suffix **-n(é)u-* in the late protolanguage (cf. *LIV* 17 f.). The majority of present-forming suffixes, such as **-e/o-*, **-i̯e/o-*, **-sḱe/o-*, are thematic and thus show no ablaut; others, notably the **-s-* of *s*-presents (cf. below) and the **-i-* of *i*-presents (Jasanoff 2003: 91–127), are invariant.

20 These are the so-called "*molō*-presents," discussed in Jasanoff 2003: 64–90.

or **o* : **e* ablaut, is reconstructible for presents in which the stem is characterized by a non-ablauting "enlargement" (e.g., 3 sg. **ǵnéh$_3$-s-ti* 'recognizes' : 3 pl. **ǵnéh$_3$-s-n̥ti*, 3 sg. **h$_2$u̯óg-s-e* 'grows': 3 pl. **h$_2$u̯ég-s-n̥ti*). The evidence of Vedic and Greek suggests that finite verbal forms were only weakly accented, or deaccented entirely, in non-initial position in main clauses.

The main features of the PIE prosodic system were thus (1) an opposition between long and short vowels, and (2) a single word accent, the position of which was regulated by a combination of lexical and morphological factors. The sections that follow survey the treatment of this system in the daughter languages outside Balto-Slavic.

1.2 Indo-Iranian

1.2.1 Udātta *and* svarita

The branch that best preserves the inherited PIE situation, unsurprisingly, is Indo-Iranian, as reflected in Vedic Sanskrit.[21] The Vedic accent is meticulously described by the Indian grammarians.[22] The basic word accent is called *udātta* 'raised', referring to its relative pitch. Contrasting with the *udātta* are two other pitch designations, *anudātta* 'not raised' and *svarita* 'sounded' or 'intoned'. Unaccented syllables are normally *anudātta*, i.e., low; in a string of *anudāttas* preceding an *udātta* only the last *anudātta* is graphically indicated, using a horizontal diacritic below the line (_). The syllable following an *udātta* is *svarita*, described as descending or "sloping" from the level of the *udātta* (or, in the specific tradition of the Rigveda, even higher) to that of the *anudātta*, and marked by a raised vertical diacritic (ˈ). A word like *puróhitaṃ* 'house priest (acc. sg.)', occurring in RV 1. 1. 1, is thus notated *pu̱rohi̱taṃ*, representing the approximate tonal contour ___ ‾‾ ◝ ___. Only the *udātta* (notationally unmarked in the Rigveda)[23] is underlyingly distinctive; the *svarita* is an automatic aftereffect of the *udātta*, while the *anudātta* is not an accent or tone at all.

The surprising practice of leaving the phonological accent unmarked while systematically marking its predictable side effects is linked to the phenomenon known as "independent" *svarita*. At the time of the oral composition of the

21 Occasional effects of the Indo-Iranian accent, such as the devoicing of **-r-* before a voiceless stop when a stressed vowel preceded (cf. *vəhrka-* 'wolf' < **vr̥ḱa-*, *kəhrpa-* 'body' < **kr̥ḱpa-*) have been identified in Avestan; cf. Hoffmann-Forssman 2004: 112 f. Since Morgenstierne 1973 it has been suspected that traces of the inherited accent survive in Pashto.

22 The ancient accounts are conveniently summarized by Allen (1953: 87–93).

23 But marked in other Vedic traditions; cf. Macdonell 1910: 78–80.

Vedic hymns, the vowels *i* and *u* occurred freely before vowels as well as consonants: cf. *hávia-* 'to be invoked' (< **-i(i̯)o-*), *vr̥kíam* (acc. sg.) 'she-wolf' (< **-íH-m̥*), *túam* 'you' (< **túH-om*), etc. When an antevocalic *i* or *u* was accented, it was predictably *udātta*, and the vowel that followed it was *svarita*. A form like *vr̥kíam* thus had the tonal contour ___ ‾‾ ‾\. By the later Vedic period, however, *i* and *u* in this position had mostly been syncopated, reducing *vr̥kíam* to disyllabic *vr̥̱kyȧm*, with the approximate contour ___ ‾\. The high-falling accent on the second syllable, lacking any visible connection to a preceding *udātta*, is the so-called independent *svarita*, transcribed by Western editors with a grave (*vr̥kyàm*).[24] The existence of the independent *svarita* explains why there is no special notation for the *udātta*. Since both the *anudātta* and *svarita* have to be marked in a case like *vr̥̱kyȧm*, and since the *anudātta* notation denotes the last *anudātta* in a sequence, the *udātta* is always predictable (x̱ - x - x̍ = x - x́ - x; x̱ - x - x - x̍ = x - x́ - x́ - x; etc.).

The Vedic accent did not survive into Classical Sanskrit; no certain trace of it remains in the modern Indo-Aryan languages. But the late Vedic contrast of *udātta* (high) and independent *svarita* (falling) illustrates a development seen again and again in the history of accent systems: the elevation to phonological status, in this case through syncope, of a tonal effect originally conditioned by a neighboring accented syllable. There are many parallels in Balto-Slavic in particular, the most familiar, perhaps, being the so-called Neo-Štokavian retraction in BCS, by which a non-initial falling accent was reinterpreted as a rising accent on the preceding syllable (e.g., *vòda* 'water' (*ò* = short rising) < *vodȁ* (*ȁ* = short falling)). More such examples will be seen below.

1.2.2 *Paradigmatic Mobility*

In relation to PIE, the role of the Vedic accent in inflectional paradigms has been sharply reduced. In nouns there is a strong tendency toward columnarization. Of the four canonical types, only the hysterokinetic stems, which typically had an inherited columnar accent (**ph₂tḗr*, **ph₂térm̥*, **ph₂trés*, **ph₂tréi*, etc.), survive more or less unchanged on a substantial scale. Among the amphikinetic stems, a bare two—*panthā-* ~ *path*(*i*)- 'path' (nom. *pánthāḥ*, gen. *patháḥ*) and *pumāṃs-* ~ *puṃs-* 'male' (nom. *púmān*, gen. *puṃsáḥ*)—retain their inherited "bilateral" accent; the rest have become columnar. Originally proterokinetic nouns, despite a few doublets that have been questionably taken to prove former root-suffix mobility (e.g., *matí-* = *máti-* (Śatapathabrāhmaṇa) 'thought'), are

24 Several subtypes of independent *svarita* are distinguished. An interesting account of the phonetics and phonology of the *svarita* is given by Beguš (2016).

uniformly immobile.[25] Non-columnar accentuation in the Vedic nominal system is mostly confined to two sets of forms: (1) uncompounded root nouns, where the accented endings *-áḥ* (gen. sg.), *-é* (dat. sg.), *-ā́* (instr. sg.), *-bhíḥ* (instr. pl.), etc. are mildly productive (cf. PIE acc. **pód-m̥* : gen. **péd-s* → Ved. *pā́dam* : *padáḥ*); and (2) original acrostatic stems, like *yákṛt*, gen. *yaknáḥ* 'liver' (for PIE **Hi̯ék^{u}-n̥-s*), some of which have taken on the accentuation of mobile root nouns.[26] Thematic stems, and the *ā*-stems derived from them (e.g., *áśvā-* 'mare' < **h$_1$éḱ$_u$e-h$_2$-*), are immobile, as they were in the parent language.

Finite verbs in main clauses, except when clause-initial, are accentless in Vedic. This is the reflex of an inherited feature, seen also in the recessive accentuation of finite verbs in Greek (cf. below). From cases where the accent is retained it is clear that the trend in verbs has been the same as in nouns: in athematic paradigms with contrasting strong and weak stems, the weak stem tends to have, or to acquire, accented full-grade endings. Thus, in an obvious echo of the analogical gen. sg. forms *padáḥ* and *yaknáḥ*, the iconic Narten present **stéu-ti* : **stéu̯-n̥ti* has been remade in Vedic to *stáuti* : *stuvánti* (as if < **stu$_u$̯-énti*), with a "normal" 3 pl. form replacing phonologically regular **stávati* < **-n̥ti*.[27] Note also the secondarily accented ending in the reduplicated present forms 1 pl. *dadhmási* and 2 du. *dhatthā́ḥ* (: *dhā-* 'make'), where the PIE paradigm seems to have had consistent accent on the reduplication syllable (cf. 3 sg. *dádhāti* < **d^{h}éd^{h}eh$_1$-ti*, pl. *dádhati* < **d^{h}éd^{h}h$_1$-n̥ti*).

1.2.3 *Distractable Long Vowels*

Alongside the transient distinction between high (*udātta*) and falling (*svarita*) "intonations" (to borrow a traditional term from Balto-Slavic), Vedic has a secondary contrast between distractable (i.e., resolvable) and non-distractable long vowels. The loss of intervocalic laryngeals in Indo-Iranian produced cases of hiatus, mainly at morpheme boundaries. Such hiatal sequences tended to contract into single long vowels, but were maintained long enough to be usable as metrical variants in Vedic verse alongside their later contracted equivalents. Etymologically justified disyllabic scansions include, e.g., *váata-* beside *vā́ta-* 'wind' (< **h$_2$u̯éh$_1$-n̥to-*), *bháas-* beside *bhā́s-* 'light' (< **b^{h}éh$_2$-es-*), and root aorist subjunctive forms of the type 2, 3 sg. *dáaḥ*, *daat* beside *dā́ḥ*, *dā́t* (: *dā-* 'give' < **deh$_3$-*). An identical situation obtains, *mutatis mutandis*, in

25 On the *matí-* ~ *máti-* phenomenon see now Lundquist 2015.

26 But not all: we also have the neuter *u*-stems *krátu*, gen. *krátvaḥ* 'strength', *mádhu*, gen. *mádhvaḥ* 'honey beverage', etc.

27 The full grade survives, however, in 3 sg. mid. *stáve* 'is praised'. Young Avestan, by way of contrast to Vedic, gives up the lengthened grade; cf. 1 sg. *staomi*, 3 sg. *staoiti*.

Old Avestan: cf. *vāta-*, scanned *vaata-*; 3 sg. aor. subj. *dāitī*, scanned *daaitī*; and *mąθrā*, scanned *mąθraā*, 'priest, holder of the *mąθra*' (< pre-IIr. **mantra-Hā* < **-o-h₁ō*).[28] Since the phonetic distinction, if any, between contracted and "inherent" long vowels was ephemeral, the poetic option of resolving *ā* as *aa* (*āa*, *aā*) was often extended to cases where it was not historically warranted, especially at morpheme boundaries. We thus find, e.g., *dáasa-* 'barbarian, demonic' for *dā́sa-*; nom. pl. *deváaḥ* 'gods' (RV 8. 28. 4) for *devā́ḥ* (PIE **-ōs* < pre-PIE **-o-es*); and 2 pl. pres. *yā́athana* for *yā́thana* (PIE **i̯éh₂-t-*).[29] It is clear from cases like these that an isolated disyllabic scansion cannot establish the former presence of a laryngeal. But in instances where the pattern is robust in both Vedic and Avestan and there is no analogical basis for the distraction, a laryngeal explanation is the only feasible analysis. Such a case is the gen. pl. ending *-ām* < **-oHom*, which is disyllabic in about a third of its many hundreds of Vedic occurrences, and always disyllabic in Old Avestan.[30]

1.3 Greek

1.3.1 *Acute and Circumflex*

In comparison with Vedic, the Greek accent system shows a number of structural innovations.[31] The most conspicuous is the distinction between two accent types, called acute (symbolized /ˊ/) and circumflex (symbolized /˜/). The Greek accent, like its Vedic counterpart, is underlyingly a rise in pitch. On a short vowel this is realized as an acute accent, which may stand on the final syllable of a word, the penult, or, under particular circumstances (see below), the antepenult (e.g., nom. sg. masc. *agathós* 'good', *híppos* 'horse', *ánthrōpos*

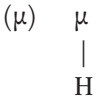
28 With the so-called "Hoffmann suffix" **-h₁on-*/**-h₁n-* (Hoffmann 1955), denoting possession.

29 On *dáasa-* ~ *dā́sa-* and other cases where there is no morpheme boundary, see Vine 1990, especially 271 ff. The motivation for the disyllabic scansion is clear in *deváaḥ* ~ *devā́ḥ*, where there is a transparent synchronic boundary between the stem and ending. In *yā́athana* ~ *yā́thana*, where there is no boundary, distracted *yā́athana* is modeled on (unattested) 3 pl. **yāā́nti* beside *yā́nti* (cf. 3 pl. *paánti* ~ *pā́nti* 'protect'). The spread of metrical distraction to cases where it was not etymologically justified points to a historical phase in the spoken language when former **-VHV-* sequences had a stylistically conditioned range of pronunciations extending from true disyllabicity (*V.V*) to ordinary monosyllabic length (*V̄*), perhaps with a "contracted length" pronunciation (*V̄:*) in between. There is no evidence to show that underlying sequences not containing a laryngeal hiatus (e.g., *o*-stem nom. pl. **-o-es*, *o*-stem dat. sg. **-o-ei*) remained uncontracted in PIE.

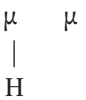
30 Kümmel 2013 gives a complete survey of the evidence for **-oHom* in Indo-Iranian.

31 For the descriptive facts in what follows, global reference is made to Probert 2006, part I.

'man'). On a long vowel or diphthong there are two theoretical possibilities, depending on whether the tonal peak occurs relatively early or relatively late in the timing of the syllable. In the latter case, the resulting rising contour is phonologically and notationally identified with the acute accent on short vowels (e.g., nom. sg. fem. *agathé* like *agathós*). An acute-accented vowel can thus be analyzed as containing one or two moras (μ), of which the rightmost bears a high tone (H):



If, on the other hand, the tonal peak of a long nucleus comes relatively early in the syllable, there is a fall in the overall pitch contour. Falling pitch is the hallmark of the phonologically marked circumflex accent (e.g., gen. sg. fem. *agathẽs*), interpretable as the realization of a high tone on the first mora of a long vowel or diphthong:



The moraic structure of long vowels and diphthongs in Greek is a novel feature vis-à-vis PIE. The distinction between the Vedic *udātta* and (independent) *svarita*, though superficially similar to the acute : circumflex contrast, is not mora-based.

The acute and circumflex accents are contrastive only in final syllables, where minimal pairs of the type *agorás* 'meeting place' (acc. pl.) vs. *agorãs* 'id.' (gen. sg.), or *kephalón* 'Big-Head' vs. *kephalõn* 'heads' (gen. pl.) are not uncommon. Elsewhere, the two accent types are in complementary distribution.[32] An accented long vowel in the penult receives an automatic acute when the vowel of the final syllable is long (x́ – x̄) and an automatic circumflex when the vowel of the final syllable is short (x̃ – x̆). This principle, known as the "*sōtẽra*-rule,"[33] is responsible for alternations of the type nom. sg. *dõron* 'gift' (short final) vs.

32 Even in final syllables there are situations where the contrast is neutralized. Thus, e.g., there are no acute *u*-diphthongs in absolute final position, and no acute long diphthongs in final syllables at all.

33 Taking its name from the fact that the acute of the nom. sg. (*sōtér* 'savior') is replaced by a circumflex in the acc. (*sōtẽra*).

gen. sg. *dṓrou* (long final). The circumflex is disallowed in the antepenult, the only other syllable that can be accented in Greek.

The origin of the acute : circumflex contrast in final syllables is uncontroversial. Inherited accented long vowels, including long vowels produced by lengthening before a syllable-final laryngeal, surface with an acute accent (e.g., *patḗr* < PIE **-tḗr* < ***-tér-s*; *agathḗ* < PIE **-éh₂*). The circumflex, by contrast, is proper to contracted long vowels and diphthongs, specifically, those in which the first of the two input components was accented prior to the contraction. In the majority of early cases the contraction was across a laryngeal hiatus, e.g., *agathẽ̄s* < **-éh₂-es*, gen. pl. *-ō̃n* (with circumflex even in consonant stems) < **-óHom*.[34] Later, the number of circumflex-accented final syllables was expanded by contraction across other kinds of hiatus—across a lost **-h-* < **-s-* (e.g., *apseudeĩs* [-ẹ:s] < **-és-es*, nom. pl. of *apseudḗs*), a lost **-i̯-* (e.g., *Sapphoũs* [-ọ:s] < **-ói̯-os*, gen. sg. of *Sapphṓ*), and a lost **-u̯-* (e.g. *hēdeĩs* < **-éu̯-es*, nom. pl. of *hēdús* 'sweet'). The etymologically correct distribution of the two accents was subject to alteration under various kinds of *Systemzwang*. Thus, in the monosyllabic nom.-acc. sg. of neuter consonant stems like *kē̃r* 'heart', *skṑr* 'excrement', *krī̃* 'barley', etc., the historically expected acute was replaced by a circumflex under pressure from the large class of disyllabic neuters where the accent stood on the leftmost possible mora (e.g., *ē̃r* < *éar* 'spring' (< **u̯és-r̥*), *húdōr* 'water' (< **u̯éd-ōr*), *gónu* 'knee' (< **ǵón-u*), etc.).

1.3.2 *The Law of Limitation*

The restrictions on the circumflex are a special case of the wider constraints on the position of the Greek accent, known collectively as the law of limitation. As a general fact, the greater the distance of a syllable from the right edge of the phonological word in Greek, the more restrictive the conditions on how it may be accented. The final syllable, where the acute and circumflex potentially contrast, allows the widest range of possibilities; the penult, where acute and circumflex are allophonic variants regulated by the *sōtẽ̄ra*-rule, comes next; and the antepenult is the most constrained. In the antepenult the only possible accent is the acute, and then only when the final syllable is short.[35] Forms of the type *ánthrōpos* 'man' (nom. sg.; short final) are thus accentually acceptable,

34 Or, in the special case of the *o*-stem loc. sg. in *-oĩ* < PIE **-ói̯*, across an actual inherited hiatus. Cf. 1.3.3.

35 "Short" in this sense means containing a short vowel followed by no more than one consonant. As pointed out by Steriade (1988: 273–5), expected compounds of the type **polú-pīdăks* 'having many springs' or **philó-kolăks* 'fond of flatterers' are phonologically disallowed; the correct forms are *polupīdaks* and *philokólaks*.

but **ánthrōpou* (gen. sg.; long final) is not. In the latter case the accent is automatically advanced to the leftmost allowed mora, giving *anthrṓpou*. Words like *ánthrōpos*, in which the accent always occupies the leftmost possible position, are said to have recessive accent. In phonological terms, an orthotonic (i.e., non-clitic) word form in Greek may have an underlying lexical accent, i.e., a high tone, on the first or second mora of its final syllable; or it may be accented on the penult; or it may not have a lexical accent at all. In the absence of a marked lexical accent a default recessive accent is assigned. The recessive accentuation of finite verbs, which are unaccented in main clauses in Vedic and which were probably weakly accented, if at all, in PIE (cf. 1.1.2, end), shows that this was a diachronic as well as a synchronic process. The most efficient course may simply be to assume a historical phonetic development 1 pl. mid. **pherometha* (no phonological or phonetic accent) > **phérometha* (default initial accent) > *pherómetha* (advancement in conformity with law of limitation).[36]

1.3.3 *Final* -ai *and* -oi

A special case, and one of some relevance to Balto-Slavic (cf. 2.2.6), is the behavior of the diphthongs *-oi* and *-ai* in absolute final position. Like all diphthongs, **oi* and **ai* were normally bimoraic sequences in early Greek, scanning as long and capable of bearing either an acute or circumflex accent (cf. *oĩkos* 'house', gen. *oíkou*; *aĩthos* 'heat', gen. *aíthou*). For purposes of determining the placement and character of the accent elsewhere in the word, however, absolute final *-oi* and *-ai* ordinarily behave as though they were sequences of short vowel + consonant, i.e., /-aj/, /-oj/, rather than /-ai/, /-oi/. We thus find, e.g., nom. pl. *oĩkoi*, *ánthrōpoi* for the forms that might have been expected to surface as **oíkoi*, **anthrṓpoi*, and present middle forms like 3 sg. *hépetai* 'follows', 3 pl. *hépontai* for expected **hepétai*, **-óntai*. The same "quasi-shortness" is encountered in the infinitive suffixes *-sai*, *-sthai*, and *-nai*. The only significant cases in which final *-oi* and *-ai* behave as *normal* long nuclei for purposes of accentuation are (1) locative adverbs, representing IE locative case forms, of the type *oíkoi* 'at home' (≠ nom. pl. *oĩkoi*) and *Isthmoî* 'on the Isthmus' (≠ nom. pl. *isthmoí*); and (2) 3 sg. optatives in *-oi* (e.g., pres. opt. *paideúoi* (: *paideúō* 'educate')) and *-ai* (e.g., aorist opt. *paideúsai*).[37] These are not arbitrary exceptions. As suggested by Schindler (apud Mayrhofer 1986: 161), the **-i* of the locative was permanently syllabic in PIE, so that the loc. sg. of an *o*-stem noun

36 And so too in the vocative, which is likewise unaccented in Vedic and recessively accented in Greek (cf. *ánthrōpe*, *sṓter*, etc.). An alternative account is offered by Probert (2012).

37 To which may be added interjections like *aiaî* 'alas!' (Probert 2006: 61).

originally ended not in ordinary *-*oi*, but in disyllabic *-*oï*.[38] In Jasanoff 2009a I tried to show that the zero-grade optative suffix *-*ih*$_1$- had the same property, making the 3 sg. optative ending disyllabic as well (*-*oï*(*t*) < *-*o-ih*$_1$-*t*).[39] The historically "normal" diphthongs thus seem to have yielded the surprising quasi-short treatment, while the disyllabic sequences yielded the synchronically normal "long" treatment. More than one scenario can be imagined for the phonetic shortening process.[40] The essential point is that the two treatments ultimately go back not to a difference of accent or intonation, but to a difference of syllabification.

1.3.4 *Paradigmatic Mobility in Greek*

With the major exception of the verb, which is recessively accented in its finite forms, the morphological profile of the accent in Greek is much the same as in Vedic. In Greek as in Vedic, mobility in the nominal system is concentrated in root nouns (e.g. *poús* (Doric *pṓs*), gen. *podós* 'foot'; *Zeús* (< **di̯ḗ-*), gen. *Di*(*w*)*ós*) and words reinterpreted as root nouns (e.g., *núks*, *nuktós* 'night', properly an acrostatic *t*-stem **nók^{u}-t-*/**nék^{u}-t-*; cf. 1.1.2). The productive declensions, including the descriptive *o*- and *ā*-stems, which were immobile from the beginning, and the *i*-, *u*-, and consonant stems, which in most cases were originally protero-, hystero-, or amphikinetic, all have columnar accent outside the vocative. Nevertheless, there are occasional surprises. The Greek reflexes of "*devī*-stems"—feminine nouns and feminine derived adjectives formed with the ablauting suffix *-*i̯eh$_2$*-/*-*ih$_2$*-—present a number of interesting anomalies. Stems of this type were originally proterokinetic, as shown by the suffix ablaut (*-*ih$_2$*- strong, *-*i̯eh$_2$*- weak) in Ved. *devī́*, gen. *devyā́ḥ* 'goddess', which gives its name to the type, and by the differently leveled root vocalism and position

38 My earlier hesitation vis-à-vis this claim (Jasanoff 2009a: 54–6) was overstated. It is true that, as I argued, the circumflex of *Isthmoî*, etc. could be explained by analogical columnarization without having to assume disyllabic *-*oï*, but this would leave the consistent long scansion of the ending unaccounted for and fail to explain why the nom. pl. in *-oí* was not similarly "columnarized" to *-*oî*. On the form of the *o*-stem loc. sg., see further 5.2.2.2.

39 Part of the evidence comes from Slavic; see 6.2.1.2 below. Permanent syllabicity was apparently also a property of the nom.-acc. du. nt. in *-*ih$_1$* (5.4.1.1).

40 The two obvious possibilities are 1) that the "short" diphthongs underwent a slight but real phonetic shortening that did not affect the newly contracted, originally disyllabic sequences; and 2) that the old "normal" diphthongs generalized prevocalic sandhi variants of the type *woj.ko.jē.san (– ⏑ – ⏒) = **woikoi ēsan* 'they were houses', while the disyllabic sequences had no such variants (*woj.ko.i.(j)ē.san (– ⏑ ⏑ – ⏒) = **woikoï ēsan* 'they were at home').

of the accent in the cognate Greek form *dĩa*, gen. (Ion.) *díēs* 'celestial (fem.)' < **díwyă*, gen. **díwyās*. The PIE paradigm was nom. **déiu̯-ih₂*, gen. **diu̯-i̯éh₂-s*, with movement of the accent between the root and suffix. Accentual mobility, which is invariably lost in *devḯ*-stems in Vedic and normally in Greek as well, is still attested in a few remarkable Greek forms built to *u*-stems, where the accent "leaps over" the *u*-element: cf. *águia*, gen. *aguiãs* 'street' (< ideal **h₂éǵ-u-ih₂-* ~ **h₂ǵ-u-i̯éh₂-*), *órguia*, gen. *orguiãs* 'fathom' (< ideal **h₃réǵ-u-ih₂-* ~ **h₃rǵ-u-i̯éh₂-*), and *Plátaia* 'Plataea' beside plurale tantum *Plataiaí* (< ideal **pléth₂-u-ih₂-* ~ **pl̥th₂-u-i̯éh₂-*).[41] The visible movement of the accent in these forms is the best direct evidence for proterokinetic mobility in any IE language. Also suggestive, with retained root ablaut but late columnarization of the accent, is *aĩsa* 'portion', (petrified) gen. sg. *ís*(*s*)*ēs*,[42] pointing to proximate preforms **áiti̯ă*, **íti̯ās* (for **iti̯ā́s*). The less archaic, productively formed *u*-stem feminine adjectives of the type *plateĩa*, *-eíās* 'flat' (: masc. *platús*; cf. *hēdeĩa* : *hēdús* 'sweet', etc.), show columnarization of the accent on the full-grade of the *u*-suffix.

1.4 Anatolian

The cuneiform writing system of Hittite furnishes no accentual information as such, but the position of the accent is often recoverable from the fact that accented vowels are optionally written with an extra vowel sign, the so-called *scriptio plena*. Thus, a spelling like *wa-a-tar* (standard transcription *wātar*) 'water' points straightforwardly to PIE **u̯ódr̥*, while its collective ("plural") *ú-i-da-a-ar* (*widār*) points either to **u̯edór* or (far more likely) **u̯edṓr*.[43] If, as is likely, the *scriptio plena* represents an actual phonetic lengthening of the

41 The stem forms given are "ideal" in the sense that the actual outputs typically show contamination between the strong and weak stems. Thus, the nom. sg. *águia* is not the phonological reflex of **h₂éǵ-u-ih₂*, which would have been syllabified as **h₂éǵu̯ih₂*, but of a compromise preform **h₂éǵu̯ih₂*/**aguwya*, with syllabic **-u-* taken from the weak stem **h₂ǵ-u-i̯éh₂-*. The weak stem itself, which would have given **agu*(*y*)*ā-*, was later remade to **aguwyā-*, with **-wy-* from the strong stem. In *órguia*, root ablaut is preserved in the Pindaric byform *oróguia*, presumably assimilated from **oréguia*. Note also inscriptional *arepuia* beside *hárpuia* 'harpy', though there is no attested accent movement in this word. I am indebted to Alan Nussbaum for clarifying my understanding of these forms.

42 In Od. 9. 42 *mḗ tís moi atembómenos kíoi ísēs* '(that) no one might on my account go deprived of his *i.*,' reading (with Fick) *íssēs* 'share' for supposed *ísē* 'equal [share]'; cf. the gloss *íssasthai* '*klēroũsthai*, apportion'. I owe the reference to Michael Weiss.

43 With regular **e* > *i* in pretonic syllables (Melchert 1994: 139) and analogical final accent from the weak cases and the hysterokinetic type.

accented vowel (cf. Hoffner-Melchert 2008: 49–50), then the Hittite accent probably had a significant stress component—a conclusion consistent with the prevalence of syncope in the later Anatolian languages, especially Lycian. Nothing we know about Hittite suggests the presence of a contrast between two kinds of final syllables, or two accent types comparable to the acute and circumflex in Greek or the *udātta* and independent *svarita* in Vedic. In inflectional paradigms the behavior of the accent is fairly typical for an older IE language. As everywhere else except Balto-Slavic, thematic formations, both nominal and verbal, are immobile. Paradigmatic mobility is occasionally observable in consonant stems, most strikingly in the word for 'earth', *tēkan*, gen. *taknāš*, which perfectly preserves the PIE amphikinetic paradigm **d^{h}ég^{h}-ōm*, gen. **d^{h}ǵ^{h}-m-és* (contrast Ved. *kṣấḥ*, gen. *kṣmáḥ*, *jmáḥ* and Gk. *khthốn*, gen. *khthonós*, with leveled zero grade of the root). Equally archaic is the maintenance of *immobility* in the isolated acrostatic gen. sg. *nekuz* [nek^{w}ts] 'night', corresponding to the well-attested (but non-Anatolian) *o*-grade nom. sg. **nók^{u}-t-s*. Finite verbs in Hittite retain their accent, thus occasionally shedding light on inherited alternation patterns. Such a case is the contrast between accented endings in the present 1, 2 pl. (e.g., *tumēni*, *dattēni* 'we, you take') and accented root in the preterite (*dāwen*, *dātten* 'we, you took'), the latter feature recalling the strong vocalism and root accent of the 1, 2 pl. root aorist in Vedic (1, 2 pl. *ákarma*, *ákarta* (*kárta*) 'we, you made').[44]

1.5 Germanic

1.5.1 *Bimoric and Trimoric Vowels*

Given its position on the dialect map of the IE family, Germanic holds special importance for Balto-Slavic. A much-discussed feature of Germanic is the distinction between two kinds of long vowels in final syllables, one more prone to shortening than the other. The difference is clearest between, on the one hand,

- PGmc. *ō*-stem (= IE "*ā*-stem")[45] acc. sg. **-ō^{N}* ("**-ō$^{N}_{1}$*"), whence Go. *-a* [-a], OHG *-a* (e.g., Go. *giba*, OHG *geba* 'gift'),
- PGmc. 1 sg. **-ō* ("**-ō$_{1}$*"), whence Go. *-a* [-a], OHG *-u* (Go. *baira*, OHG *biru* 'I bear');

44 An ancient pattern, as shown by Hoffmann (1968: 7). For its treatment in Hittite see Jasanoff 2003: 81–6.

45 Post-IE **ā* and **ō* merge as **ō* in Germanic.

and, on the other,

- PGmc. gen. pl. *-$\bar{o}^N$ ("*-$\bar{o}^N{}_2$"), whence Go. *-o* [-o:], OHG *-o* (e.g., Go. *þizo* 'illarum', OHG *dero* 'illorum, illarum'),
- PGmc. adverbial *-$\bar{o}$ ("*-$\bar{o}{}_2$"), whence likewise Go. *-o* [-o:], OHG *-o* (Go. *galeiko*, OHG *gilīhho* 'like').

The pre-laryngeal literature on this phenomenon is not very edifying. Neogrammarian opinion directly equated the special, length-retaining property of the gen. pl. in Germanic with the preference of the gen. pl. for circumflex accentuation in Greek (*-ōn*, accented *-ō̃n*) and Lithuanian (*-ų*, accented *-ų̃*; see below). The result was the doctrine, not yet completely exorcised, that PIE long vowels and diphthongs in final syllables could be normally long ("bimoric") and bear acute "tone," or hyperlong ("trimoric") and bear circumflex "tone," regardless of the position of the word accent. To complete the confusion of length, accent, and tonal contour, *-$\bar{o}{}_2$ and *-$\bar{o}^N{}_2$ were often written *-ō̃*, *-ō̃n* in the older handbooks, both in Proto-Germanic and PIE.

The laryngeal theory eliminates the need for these complexities. The PIE gen. pl. ending, as we now know, was **-oHom* (= Ved. *-ām*, *-aam*), accented **-óHom* (cf. 1.2.3); the circumflex accent in Greek tells us nothing about the length or tonal character of the ending in the protolanguage, but simply that the accent stood on the first **-o-* prior to the loss of the laryngeal. Similarly in Vedic, the reason for the optional disyllabic scansion of the gen. pl. in *-ām* is that its constituent moras were still uncontracted at the beginning of the poetic tradition, not that it inherited a mysterious quality of extra length or tone from PIE. Within Germanic itself, where the contraction product of **-oHom* resists shortening in Gothic, the hypothesis that the contracted vowel was longer than a "normal" long vowel is entirely plausible, and the traditional term "trimoric," so long as it is kept free of intonational overtones, can be retained. Contrary to an objection sometimes raised against the assumption of trimoric vowels in Proto-Germanic, setting up a third degree of vowel length does not imply that the vowel of the trimoric ending *-$\bar{o}^N{}_2$—we will now write *-$\bar{\bar{o}}^N$, with a second macron—was literally three fixed-length moras long, i.e., longer in absolute duration than the combined length of two monomoraic short vowels. It simply means that the "new" long vowel was longer than an "old" long vowel—a perfectly natural assumption in view of the crosslinguistic tendency of long vowels to be less than twice the length of their short counterparts.[46]

46 On the general point about long vowels vs. short vowels, see the statistics in Devine and Stephens 1994: 228. In a classic study, Elert (1964) found that Swedish short vowels have

The number of demonstrably trimoric endings in Germanic is not large. In addition to the gen. pl., we have, as just seen, the ending of Go. *galeiko* and OHG *gilīhho*; the **-ō̄* of these forms is usually equated to the Vedic thematic ablative in *-āt* and the Lithuanian thematic gen. sg. in *-o*, pointing to PIE **-e/o-$h_2$ed*.[47] The *ō*-stem nom. pl. in **-ōz* < **-eh_2-es* was trimoric as well, as shown by the contrast between OE (= Old West Saxon) nom. pl. *-a* < **-ōz* and acc. pl. *-e* < bimoric **-ōz* (< **-ās* < **-āms* < **-e$h_2$ms*; see 3.4.3 and 5.1.8). In the famously problematic nom. sg. of *n*-stems, there is evidence in Proto-Germanic for *both* bimoric **-ō^N* and trimoric **-ō̄*. Bimoric **-ō^N* is the ending in feminines and neuters in West Germanic (OHG *zunga* 'tongue', *ouga* 'eye') and probably in masculines in Gothic (e.g., *guma* 'man');[48] trimoric **-ō̄* is found in feminines and neuters in Gothic (*tuggo*, *augo*) and masculines in West Germanic (OHG *gomo*). The PIE form of the ending was simply **-ō*, representing the phonologically regular treatment of pre-PIE word-final **-ōn* < **-on-s* (in the masculine) and **-on-h_2* (in the neuter). The Proto-Germanic variant **-ō^N*, with analogically re-added **-n*, was an inner-Germanic creation, comparable to the analogical *-ōn* of Gk. *ákmōn* 'anvil', *hēgemṓn* 'leader', etc.[49] Since this new **-ō^N*, like the **-ō^N* of the *ō*-stem acc. sg., was bimoric, the source of Germanic trimoric variant **-ō̄* must have been the older *n*-less PIE **-ō*.[50] The extra mora of length could hardly

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approximately 65% the length of long vowels at a normal tempo of speaking, but 80% the length of long vowels in fast speech. It is thus in no way peculiar that two short vowels could have combined to yield a longer unit than an ordinary long vowel—especially not in a part of the world where phonetic hyperlength, despite its typological rarity, is well-attested in Estonian and other nearby Uralic languages. See the discussion in Ladefoged and Maddieson 1996: 320–21. Yoshida 2012 appears to misunderstand the process of intervocalic laryngeal loss and contraction as compensatory lengthening.

47 Despite the infrequency of disyllabic scansions in the Rigveda, a laryngeal hiatus is virtually guaranteed by the *ā*-timbre of the Lithuanian ending (*-o* < proximate **-ā*(*d*); **-ō*(*d*) would have given Lith. **-uo*).

48 In principle, the ending of Go. *guma* could also go back to hysterokinetic **-ē^N* < **-ēn*.

49 The dropping of the *-n* was phonologically regular after **-ō-*, as shown by Lat. *homo* 'man', Lith. *žmuõ* 'id.', OIr. *cú* (leniting) 'dog', Skt. *aśmā* 'heaven', Hitt. *ḫāra*[*š*] 'eagle', etc. Contrast the retention of the *-n* after **-ē-* in Lat. *lien* 'spleen', OIr. *bé* (nasalizing) 'woman', and Hitt. MUNUS-*za* 'id.' In both Greek and Germanic, the re-application of **-n* to **-ō* would have been favored by the fact that it was never lost after **-ē-*.

50 An illuminating case is the originally neuter word for 'name', PGmc. **namō̄*, with **-ō̄* < PIE **-ō*. In Gothic, where all neuter *n*-stems end in *-o* < **-ō̄* (cf. *augo* 'eye', *auso* 'ear', etc.), *namo* is unproblematically neuter as well. But in West Germanic, where the bulk of neuter *n*-stems were remade to end in **-ō^N* (cf. OHG *ouga*, *ōra* < **-ō^N*), **namō̄* was one of a handful of inherited neuters that retained its phonologically regular ending. Since this ending

have been the result of contraction across a laryngeal hiatus. Rather, as I have proposed elsewhere,[51] trimoricity was the regular Germanic treatment of PIE long vowels—as opposed to sequences of the type **-VH*—in absolute final position. Final long vowels were probably articulated with a few milliseconds of non-phonemic extra length in the post-IE dialect ancestral to Germanic. When laryngeals were lost, sequences of the type **-VH#* yielded bimoric long vowels (**-V̄#*), sequences of the type **-VHV#* yielded trimoric long vowels (**-V̄̄#*), and long vowels in absolute final position, being redundantly slightly longer than long vowels elsewhere in the word, were identified with the trimoric longs and phonologized as such.

1.5.2 *Verner Doublets*

The PIE accent was replaced by a system of automatic initial stress in Germanic. Prior to its loss, however, the inherited accent figured critically in the environment for Verner's Law, the well-known sound change by which word-internal voiceless fricatives became voiced when not immediately preceded by the IE accent (cf. Go. *fadar* [-ð-] 'father' < **faðér* < **faþér* < **ph₂tér-*, but *broþar* 'brother' < **brā́þer* < **bréh₂ter-*). Owing to differences in the position of the accent in grammatically related forms, Verner's Law produced alternations of voiceless and voiced fricatives, as, e.g., in **keusana*^{N} 'choose' (cf. OE *cēosan*) < **ǵéuse/o-* vs. **kuzum* 'we chose' (OE *curon*) < **ǵeǵus-′*, or **werþana*^{N} 'become' (Go. *wairþan*) < **u̯érte/o-* vs. **warðijana*^{N} 'make become' (Go. *-wardjan*) < **u̯ortéi̯e/o-*. Alternations of this type, traditionally known as *grammatischer Wechsel*, have long been used for pedagogical purposes to demonstrate the regularity of sound change and the relative chronology of the stages of the Germanic consonant shift. Although customarily illustrated with examples from the verbal system, *grammatischer Wechsel* is also well attested in nouns. In nouns it is responsible for "Verner doublets," minimally contrasting versions of the same stem, one with a voiceless and the other with a voiced fricative. Examples include **hwehwla-* 'wheel' (OE *hweohl*, *hwēol*) vs. **hweɣwla-* 'id.' (OE *hweogol*);[52] **hasan-* 'hare' (OHG *haso*, OFris. *hase*) vs. **hazan-* 'id.' (OE *hara*); **ga-burþi-* 'birth' (Go. *ga-baurþs*) vs. **ga-burði-* 'id.' (OHG *giburt*, OS *giburd*); *balþa-* 'bold' (Go. *balþs*, OHG *bald*) vs. *balða-* (OIcel. *baldr*); and many others.

There is no consensus regarding the origin of Verner alternations in nouns. In the case of **hwehwla-* ~ **hweɣwla-*, the two accentually conditioned variants

(**-ō̄*) was otherwise the *masculine n*-stem ending in West Germanic (cf. OHG *gomo*, OE *guma* < **-ō̄*), **namō̄* was reclassified as masculine (cf. OHG (*ther*) *namo*, NHG (*der*) *Name*).

51 First in Jasanoff 2002: 37–8.

52 The **h* ~ *ɣ* alternation implies an earlier phase **χ* ~ *ɣ*, as is in fact universally assumed.

recall the difference between Ved. oxytone *cakrá-* (nt., also masc.) 'id.' and its barytone Greek cognate *kúklos* (masc.), with collective plural *kúkla* (nt.). Here and in other Germanic neuters the inherited accent pattern may originally have been the same as in Gk. *mērós* 'thigh', collective pl. *mē̃ra*, where the difference between the oxytone singular and barytone collective suggests a relationship of internal derivation (see below). Words meaning 'hare', 'birth', etc., however, are unlikely to have had collective plurals. According to Schaffner (2001), *grammatischer Wechsel* in non-neuters is a direct reflex of the mobility of the proterokinetic and amphikinetic accent/ablaut types in PIE. If so, this would make Germanic more conservative in this respect, accentologically speaking, than any other branch of the IE family. Alternatively, it has been suggested that Germanic was originally like Balto-Slavic, with a non-traditional type of mobility in all nominal stems, including *o*- and *ā*-stems.[53] The strong version of this hypothesis, associated with Stang and his followers in the Moscow Accentological School, takes the putative agreement of Germanic and Balto-Slavic to reflect the situation in the protolanguage. A less extreme version of the same approach, represented by Kiparsky 1973: 845, sees Germanic and Balto-Slavic as having innovated in parallel ways. The problem of the Germanic forms cannot be pursued here. But there is no way a solution will ever be found without an understanding of the situation in Balto-Slavic.

1.6 Accent and Ablaut in Secondary Derivation

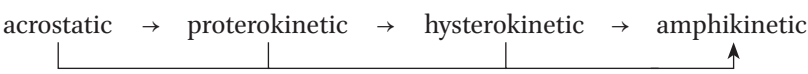
1.6.1 *Internal Derivation*

Secondary derivation, i.e., the formation of derived stems from already characterized stems, was implemented in PIE in two ways: by adding an affix, with or without accentual or apophonic changes ("external derivation"); or, alternatively, by modifying the accent and ablaut specifications of the derivational base without adding an overt affix ("internal derivation"). Although external derivation—specifically, suffixation—is the derivational mechanism *par excellence* in the IE daughter languages, numerous traces survive of a period when the more archaic mechanism of internal derivation was important as well. Internal derivation is best illustrated in the nominal system, where, according to a process first described in lectures by Schindler in the 1970's, an acrostatic, proterokinetic, or hysterokinetic substantive could form an internal derivative that functioned in any or all of three principal ways:

53 The proposal goes back to Barber (1932), who first undertook the systematic study of these forms.

1) as a possessive adjective ('having X'; e.g., **krót-u-* ~ **krét-u-* 'strength' (acrostatic b; cf. Ved. *krátu-*) ⇒ **krét-u-* ~ **kr̥t-éu-* 'having strength, strong' (proterokinetic; cf. Gk. *kratús*));[54] or
2) as the second member of a possessive (bahuvrīhi) compound (e.g., **ph₂-tér-* ~ **ph₂-tr-ér* 'father' (hysterokinetic; cf. Gk. acc. sg. *patéra*) ⇒ **h₁su-p(é)h₂-tor-* ~ **h₁su-ph₂-tr-ér* 'having a good father, well-born' (amphikinetic; cf. Gk. acc. sg. *eu-pátora*)); or
3) with a further suffix **-h₂*, as a collective of the type that often developed into a neuter plural (e.g., **u̯ód-r̥* ~ **u̯éd-n̥-* 'water' (acrostatic; cf. Hitt. *wātar*) ⇒ **u̯éd-ōr* < **-or-h₂* 'bodies of water' (amphikinetic; cf. Gk. *húdōr*, Hitt. *úidār*)).[55]

Formally, the derivational process seen in these forms followed the schema



—that is, the internal derivative of an acrostatic base could be proterokinetic or amphikinetic; that of a proterokinetic base could be hysterokinetic or amphikinetic; and that of a hysterokinetic base could only be amphikinetic. The reason for the observed "directionality" of the process is a topic of ongoing speculation.[56]

Thematic nominal and verbal stems, i.e., stems ending in the thematic vowel **-e/o-*, never display paradigmatic mobility in Vedic, Greek, or Hittite. But there is clear evidence of *derivational* mobility in pairs of the type Gk. *tómos* 'a slice, piece' (< **tómh₁-o-*)[57] : *tomós* 'sharp, cutting' (< **tomh₁-ó-*), or Ved. *vára-* 'wish' (< **u̯ólh₁-o-*) : *varā-* 'suitor' (**u̯olh₁-ó-*), where the first term denotes an action noun and the second a possessive adjective that may be substantivized

54 Also in *s*-stems: cf. Ved. *ápas-* (originally proterokinetic) 'work' : *apás-* (originally hysterokinetic) 'worker, artist'; *yáśas-* (proterokinetic) 'glory' : *yaśás-* (hysterokinetic) 'glorious'; etc. The paradigms are "ideal" (cf. note 41): especially in Indo-Iranian, where vowel distinctions have been lost by sound change, the formal difference between a noun and its internal derivative is often reduced to a single feature, such as the position of the accent.

55 According to the argument developed in Nussbaum 2014, the possessive meaning proper to functions 1) and 2) also lies behind function 3).

56 No systematic account of internal derivation was published by Schindler during his lifetime. Early presentations by colleagues and former students are Watkins 1982: 261 f., Nussbaum 1986: 102 ff., and, more recently and going in directions of its own, Widmer 2004.

57 I adopt the convention of writing **-o-* for **-e/o-* in nominal stems.

to yield an agent noun (*'having cutting' > '(one who is) cutting', *'having wishes' > 'suitor'). According to a suggestion of Schindler (e.g., apud Nussbaum 2014: 245–6), *tomós*-type adjectives can be seen as the internal derivatives of *tómos*-type substantives. As such, they regularly appear in second position in compounds (e.g., Ved. *dhārā-varā-* 'delighting in streams', lit. 'having a wish for streams'; Gk. *dru-tómos* (for **-tomós*)[58] 'woodcutter', lit. 'having the cutting of wood'). They also underlie feminine verbal abstracts and result nouns in *$*-é-h_2$* (cf. Gk. *tomḗ* 'a cutting, stump' < *$*tomh_1-é-h_2$*), underscoring the close relationship of feminine "*ā*-stems" to collectives and neuter plurals.[59]

1.6.2 *External Derivation*

Internal derivation in the nominal system, which explains much of the seemingly unmotivated apophonic and accentual complexity of nominal morphology in the individual languages, is nowhere preserved as a complete, functioning apparatus. Only a few individual subpatterns, such as the Greek replacement of originally proterokinetic neuter *s*-stem nouns (e.g., Gk. *klé(w)os* 'fame', *génos* 'race') by originally hysterokinetic *s*-stem adjectives (*-kle(w)ḗs*, *-genḗs*, etc.) in compounds, retain their vitality in the historical period. The normal derivational mechanism in Indo-European is suffixation. Here, as always with productive morphology, it is impossible to be sure about the synchronic situation in the protolanguage at the notional moment of the break-up of the family. There are many sources of potential uncertainty. What may appear to be a unitary suffix at a given linguistic stage, e.g., *-*ro*-, *-*to*-, or *-*no*-, can have had more than one inner-IE derivational source and hence more than one associated accent pattern.[60] More generally, the accentuation of synchronically transparent derived stems in the daughter languages is rarely trustworthy evidence for reconstruction purposes, since it is never possible to rule out the possibility of interference from derivationally related forms. It is thus not a realistic goal—and certainly not a necessary or desirable one in the present context—to look for a complete, suffix-by-suffix account of the accentuation

58 See 1.6.2 (end) with note 63.

59 Another type of internal derivation involving thematic stems, probably ultimately related to the main *tómos* ⇒ *tomós* type and a source of apparent accentual mismatches between daughter languages, is the process of forming substantivizations to oxytone adjectives by retracting the accent and (in some cases) upgrading the root vocalism. Exx.: Ved. *kr̥ṣṇá-* 'dark' ⇒ *kŕ̥ṣṇa-* 'dark one, antelope', Gk. *leukós* 'white' ⇒ *leũkos* 'kind of fish', PIE *$*ǵn̥h_1-tó-$* 'born' (Ved. *jātá-*, etc.) ⇒ *$*ǵénh_1-to-$* 'thing born, Ger. *Kind*, etc.).

60 Thus, e.g., the *-ro-* of Gk. *húdros* 'water snake' (= NE *otter*, etc.), a substantivization of **udró-* 'living in the water' and ultimately a derivative of *$*u̯ódr̥$* 'water', is etymologically quite distinct from the *-ro-* of *eruthrós* 'red' (= Toch. B *ratre*, etc.), a derivative of the root noun *$*h_1r(é)ud^h-$* 'redness'.

of secondary (and tertiary) derivatives in the protolanguage. What we can do is observe the general workings of the PIE system as this shows itself in the most conservative daughter branches, Vedic and Greek.

The picture in these languages is quite varied. In Vedic, some common derivational suffixes, such as the *-tva-* of abstract nouns (e.g., *devatvá-* 'divinity' (: *devá-*), *śatrutvá-* 'enmity' (: *śátru-* 'enemy')) and the *-in-* of possessive adjectives (e.g., *pakṣín-* 'winged' (: *pakṣá-* 'wing'), *aśvín-* 'having horses' (: *áśva-* 'horse')), are dominant, i.e., always receive the accent regardless of the accentuation of the base. In other formations the suffix is recessive, i.e., it leaves the accentuation of the derivational base unchanged.[61] Here belong, *inter alia*, most of the possessive adjectives in *-vant-* (e.g., *putrávant-* 'having a son' (: *putrá-* 'son'), *śácīvant-* 'powerful' (: *śácī-* 'power')), the comparatives in *-tara-* (e.g., *tavástara-* (: *tavás-* 'strong'), *cā́rutara-* (: *cā́ru-* 'dear')), and the superlatives in *-tama-* (*tavástama-*, *cā́rutama-*)). The abstract-forming suffix *-tā*, along with its extensions in *-tāt-* and *-tāti-*, is "pre-accenting," that is, it assigns the accent to the immediately preceding syllable (e.g., *puruṣátā* 'human nature' (: *púruṣa-* 'human being'), *bandhútā* 'relationship' (: *bándhu-* 'relative'). Other suffixes observe no consistent rule at all. The *-a-* of *vṛddhi* derivatives—relational adjectives, often substantivized, with apophonic "upgrade" of the root syllable—was probably originally accented but is no longer consistently so in the Rigveda (e.g., *bheṣajá-* 'medicament' (: *bhiṣáj-* 'healer'), *tvāṣṭrá-* 'belonging to Tvaṣṭṛ' (: *tváṣṭṛ*), but *mā́ruta-* 'relating to the Maruts' (: *marút-*)).[62] The common adjectives of appurtenance in disyllabic *-ia-* most often accent the *-i-*, producing a *svarita* on the following vowel (e.g., *viśyà-* 'belonging to the clan' (: *víś-* 'clan'), *rājanyà-* 'belonging to the royal class' (: *rā́jan-* 'king')), but there are conspicuous exceptions that accent the base (e.g., *gávya-* 'bovine' (: *go-* 'cow'), *nárya-* 'manly' (: *nṛ-* 'man')). The accent of nouns and adjectives formed with the ubiquitous suffix *-ka-* is hard to predict except in the case of diminutives, which usually accent the suffix (e.g., *putraká-* 'little son', *rājaká-* 'kinglet').

Greek shows similar variety. The majority of suffixed nominal stems can be descriptively classified as either oxytone or recessive (i.e., inducing a recessive accent). To the oxytone type, regardless of the accentuation of the derivational

61 The terms "dominant" and "recessive" are used in a related but different sense in Balto-Slavic; see 5.6.1.

62 Whitney (1889: 456), in his inimitable style, has the following to say about the accentuation of *vṛddhi* derivatives in Sanskrit: "The derivatives with initial *vṛddhi*-strengthening always have their accent on either the first or the last syllable. And usually it is laid, as between these two situations, in such a way as to be furthest removed from the accent of the primitive; yet, not rarely, it is merely drawn down upon the suffix from the final of the latter; much less often, it remains upon an initial syllable without change."

base, belong a few highly visible formations like the denominal agent nouns in *-eús* (e.g., *hiereús* 'priest' (: *hierós* 'holy', subst. *hierá* offerings'), *hippeús* 'horseman' (: *híppos* 'horse')) and the relational adjectives in *-ikós* (e.g., *basilikós* 'royal' (: *basileús* 'king'), *phusikós* 'natural' (: *phúsis* 'nature')). The more common recessive type includes (*inter alia*) the possessive adjectives in *-(w)eis*, gen. *-(w)entos* (e.g., *kharíeis* 'graceful' (: *kháris* 'grace'), *timḗeis* 'honored' (: *timḗ* 'honor'), the derived *devī*-feminines to nouns in *-eús* (e.g., *hiéreia* 'priestess' (contrast *hierós*, *hiereús*)), the adjectives of appurtenance in *-ios* (e.g., *híppios* 'belonging to horses' (: *híppos*), *theîos* 'pertaining to the gods' < **-éhiio-* (: *theós* 'god'), and the comparatives and superlatives in *´-teros* and *´-tatos*, respectively (e.g., *sophṓteros*, *-ṓtatos* 'wiser, wisest' (: *sophós* 'wise')). A minority of derived stems, such as the diminutives in *-íon* (e.g., *paidíon* 'small child') and *-ískos* (*asterískos* 'little star'), have inherent accent on the pre-final syllable. More usually, however, non-recessive penultimate accent is directly or indirectly due to Wheeler's Law, a sound change that retracted the accent one syllable to the left in oxytone dactylic words (e.g., **poikilós* > *poikílos* 'many-colored'). An analogical extension of this rule was responsible for the penultimate accent in compounds like *drŭtómos* (1.6.1), retracted from **drŭtomós* on the model of phonologically regular *hekēbólos* < **-bolós* 'far-shooting', *androktónos* < **-ktonós* 'man-slaying', etc.[63]

1.7 Theoretical Issues

1.7.1 *The Generative-compositional Approach*

No mention has yet been made of the substantial phonological literature, especially in the generative tradition, that has grown up around the synchronic study of the IE accent, both as reflected in the individual early languages and in the parent language itself. Generative treatments of what we may call "IE-type accent systems" were pioneered in the 1960's and 1970's by Halle and Kiparsky and importantly extended in the 1980's and later in work by Steriade, Sauzet, Golston and others. Over the years, the closely related, but in detail quite divergent approaches of these scholars have attracted many followers. Generative analyses of IE-type systems, as well as the non-generative approach of Garde (1976) and the Moscow Accentological School (see especially Dybo 1981), are "compositional" in the sense that morphemes are specified for various relevant properties (e.g., ±accented, ±dominant, etc.), which then serve as inputs to a computation that determines the surface location of the accent in the emergent phonological word. An important part of the computational apparatus

63 On Wheeler's Law and other late Greek retractions, see Probert 2006: 93 ff.

is a "Basic Accentuation Principle" (BAP), which deletes all but one (normally the leftmost) accent in a word with multiple accents, and assigns an accent to a default location (normally the left edge of the word) in words where there is no marked accent.[64] The concept of accentable but underlyingly unaccented words, or "enclinomena," is an import from the Slavic accentological tradition, where it was the brainchild, like so much else in Slavic linguistics, of Roman Jakobson (1963).

Applying the compositional framework to Vedic, Kiparsky, in a major recent discussion of IE accent and ablaut (Kiparsky 2010), accounts for the behavior of the root noun *vr̥t-* 'army, host' by assuming an unaccented root /vr̥t-/, accented weak case endings (e.g. instr. sg. /-á́/), and unaccented strong case endings (e.g., acc. sg. /-am/). In the weak cases the leftmost and only accent in the word is on the ending, where it surfaces in the actual form (*vr̥tá́*; also gen. sg. *vr̥táḥ*, instr. pl. *vr̥dbhíḥ*, etc.). In the strong cases, where there is no underlying accent, the BAP assigns an accent to the leftmost (= initial) syllable (acc. sg. *vŕ̥tam*; also nom. pl. *vŕ̥taḥ*, nom.-acc. du. *vŕ̥tau*). To account for the fact that non-monosyllabic stems, including the compounds of root nouns, fail to display the same mobility, Kiparsky further posits a mechanism that he calls the "Oxytone Rule," which assigns an accent to the rightmost syllable of polysyllabic stems. The Oxytone Rule explains the fixed accent of the compound *trivr̥t-* 'having three hosts':

underlying forms:	vr̥t-am	vr̥t-á́	trivr̥t-am	trivr̥t-á́
Oxytone Rule	—	—	trivŕ̥t-am	trivŕ̥t-á́
BAP	vŕ̥t-am	vr̥t-á́	trivŕ̥t-am	trivŕ̥t-ā

In the weak cases the accent assigned by the Oxytone Rule trumps the inherently accented case ending to its right, causing /trivŕ̥t-á́/ to surface as *trivŕ̥tā*.

To deal with suffix ablaut, Kiparsky further assumes a "Zero Grade Rule," which deletes the full-grade vowel *-a-* before a following accented morpheme. The Oxytone Rule, Zero Grade Rule, and BAP, applying in that order, combine to produce the correct forms of the words for 'brother' (perhaps originally acrostatic) and 'father' (originally hysterokinetic):

underlying forms:	bhrā́tar-am	bhrā́tar-á́	pitar-am	pitar-á́
Oxytone Rule	bhrā́tár-am	bhrā́tár-á́	pitár-am	pitár-á́
Zero Grade Rule	bhrā́tár-am	bhrā́tr-á́	pitár-am	pitr-á́
BAP	bhrā́tar-am	bhrā́tr-ā	pitár-am	pitr-á́

64 Steriade's analysis of Greek (1988) exceptionally assigns *priorité à droite*.

In the synchronically irregular amphikinetic nouns *panthā- ~ path(i)-* and *pumāṃs- ~ puṃs-*, an ad hoc provision is needed to position the accent on the root in the strong cases. Here the Oxytone Rule is stipulated not to apply (154 f.), yielding

underlying forms:	pumans-am	pumans-á́
[Oxytone Rule	—	—]
Zero Grade Rule	pumans-am	pumns-á́
BAP	púmans-am	puns-á́

whence, with unrelated further changes, the attested *púmāṃsam*, *puṃsá́*.[65]

Kiparsky then goes on to argue, with digressions into Greek, Balto-Slavic, and Germanic, that the basic apparatus needed to account for the facts of Vedic—accented and unaccented morphemes, the BAP, the Oxytone Rule, and the Zero Grade Rule—were precisely the accentual "toolkit" needed to account for the facts of PIE. In this respect he upholds the spirit of his and Halle's earlier writings on the PIE accent, which agree in projecting a version of the productive Vedic, Greek, and/or BSl. system back into the protolanguage.[66]

1.7.2 *Discussion*

In assessing the value and relevance of this approach, it is essential to distinguish between its synchronic and historical claims. Generative grammar is a synchronic theory of how linguistic knowledge is organized in the mind-brain. Its central claim is that linguistic utterances are the product of internal mental operations that combine abstract units into meaningful utterances. The apparatus that performs these operations for a given speaker and a given language is called that speaker's grammar of the language; human children have a genetically endowed ability to construct mental grammars on the basis of the linguistic data they encounter in their first years of life. One of the modules of the mental grammar is the phonological component, which prepares sequences of abstract representations for expression in phonetic form. The structure of the phonological component and the character of phonological representations are matters on which thinking has evolved considerably over the nearly

65 No explicit derivation is given for *panthā- ~ pathi-*, where Kiparsky operates not with *panthā-* but with the post-Rigvedic strong stem *panthān-*. He appears to treat the synchronic relationship between the two stems as suppletive.

66 This would not be an unfair characterization of Kiparsky 1973, Kiparsky and Halle 1977, and Halle 1997.

sixty-year history of generative phonology. Early generative phonologists posited extremely abstract underlying representations and a large inventory of synchronic rules, a practice that peaked in the period around Chomsky and Halle's classic work, *The Sound Pattern of English* ("SPE"; Chomsky and Halle 1968). Partly as a reaction to the perceived excesses of *SPE*, relatively concrete representations became the norm in the years that followed, and the role of the lexicon was expanded to incorporate—in effect, to list—many forms previously generated by rule. In the mid-1990's the "derivational" orientation of earlier generative phonology mostly gave way to the theoretical approach known as Optimality Theory (OT), which eliminated rules altogether and replaced them with ranked violable constraints.[67] But important as these theoretical changes have been, anyone who studies the history of generative treatments of IE-type accent systems will be struck by how the basic elements of the analysis—inherently accented (or accent-assigning) and unaccented stems and affixes, together with a mechanism for deciding which accent "wins" in cases of conflict and assigning a default accent when no accent is present—remain the same as in the early days of the generative project.

The present work has no theoretical ax to grind. The core assumptions of generative grammar, and of generative phonology in particular, are implicitly accepted in what follows, not because the historical account to be developed in chs. 4–6 is closely dependent on this or any other particular framework, but because the generative approach is the only current theory of synchronic language structure with a defensible claim to descriptive and psychological reality. The advantages of a compositional account of the synchronic accent systems of Vedic, Greek, and above all Balto-Slavic, are accepted as well. But the assumption of strict compositionality for Vedic and Greek forces non-trivial analytical choices. We have seen how Kiparsky exempts Ved. *panthā-* ~ *path(i)-* and *pumāṃs-* ~ *puṃs-* from the Oxytone Rule by marking them as exceptions in the lexicon. This is a descriptively acceptable solution for these words, since they are the only two stems that remain synchronically amphikinetic in Vedic. But if there were fifty or a hundred amphikinetic stems, as there must have been at an earlier stage in the prehistory of the language, the choice might have been less straightforward. Another specific analysis adopted by Kiparsky, again in Vedic, concerns the form of the gen. sg. In athematic stems (i.e.,

67 The presentation in Kiparsky 2010 is couched in the pre-OT "Lexical Phonology" framework developed by Kiparsky himself in the late 1970's and 1980's. "Stratal OT," Kiparsky's constraint-based adaptation of Lexical Phonology, is not used, he tells us, for presentational reasons.

non-*a*-stems) the gen. sg. ending sometimes appears as accented *-áḥ* (e.g., gen. sg. *vṛtáḥ* cited above) and sometimes as unaccented *-aḥ* (e.g., gen. sg. *trivṛ́taḥ*, with accent on the stem by the Oxytone Rule). Both point to underlying /-ás/ in Kiparsky's system. There is also, however, an unaccented version /-s/ proper to historically acrostatic and proterokinetic stems (e.g., gen. sg. *bhrā́tuḥ* < **-tr̥-s*, *devyā́ḥ* < **-i̯éh₂-s*). The two are obviously related; the second is historically the unaccented zero-grade version of the first. Yet for Kiparsky the "same" ending cannot be underlyingly accented in some forms and underlyingly unaccented in others. He is therefore obliged to compromise the compositional principle by listing the variants /-ás/ and /-s/ in the lexicon as allomorphs, unlike the far more numerous and typical cases where the alternation between full- and zero-grade forms is obtained by rule (contrast rule-generated 3 sg. *ás-ti* : pl. *s-ánti*, acc. sg. *pitár-am* : dat. sg. *pitr-é*, etc.). These are not fatal embarrassments; all synchronic analyses have loose ends, mirroring the fact that languages retain historical remnants that can no longer be generated by rule. But since the amphikinetic accent pattern and the zero-grade gen. sg. ending are both obvious archaisms, examples like these raise a warning flag: the compositional model is unlikely to work as well for PIE as it works for the daughter languages.

And indeed, Kiparsky's vision of PIE is rather suspiciously Vedic-like. It is true, as he observes, that professional Indo-Europeanists tend to emphasize grammatical anomalies—suggestive archaisms, previously unsuspected accent/ablaut alternations, and so on—and to devote relatively little time to questions of synchrony. But there is a reason for this: today's archaisms and oddities are yesterday's regularities. Even under the most flexible possible traditional approach, late PIE grammar poses significant challenges for Kiparsky's model. The case of the Vedic "allomorphs" /-ás/ and /-s/ is not isolated; it recurs on a larger scale in connection with the proterokinetic accent/ablaut type (**mén-ti-* ~ **mn̥-téi-*), where the suffix is accent-bearing in the weak but not the strong stem. A skeptic confronting these problems might wonder about the insightfulness of labeling every PIE morpheme as either unambiguously "accented" or "unaccented." Kiparsky's response is to cast doubt on the validity of the proterokinetic reconstruction altogether, questioning, e.g., the reality of the putative movement of the accent between root and suffix. His skepticism is exaggerated. Gk. *águia*, gen. *aguiãs* and *órguia*, gen. *orguiãs*, as we have seen (1.3.4), can hardly be anything but a reflex of proterokinetic mobility; we have also met the proterokinetic word for 'woman', **gᵘén-h₂-* ~ **gᵘn-éh₂-*, perfectly preserved in OIr. *ben* < **gᵘéna* (also *bé* < **gᵘḗn*),[68] gen. *mná* < **gᵘnás* (cf. note

68 On the form of the nom. sg. see Jasanoff 1989.

18). Most Indo-Europeanists familiar with the comparative data, given a choice between positing a proterokinetic type and a pure compositional accent system for PIE, would probably favor giving up or modifying the compositional analysis.[69]

1.7.3 *Conclusion*

This is not the place for a full engagement with the merits and demerits of the compositional approach to IE accentology. As will be seen directly in later chapters, compositionality is an essential part of the synchronic picture in Balto-Slavic, the branch of the family for which it was invented. It can be extended, though with some loss of elegance and generality, to Vedic and Greek. Whether it can also be made to work insightfully for PIE is a question which, provided the facts are respected, can be left to phonologists with an interest in the relevant theoretical issues. According to the view taken here, there was only an indirect relationship between the computational process that assigned the surface accent in the synchronic grammar of late PIE and the changes that gave rise to the differences among the accentuation systems of the individual IE branches. The theoretical orientation of this book, which might be called "generative Neogrammarianism," is that although speakers have internalized mental grammars with abstract representations and rules or constraints, changes from one generation's grammar to another's are mediated and largely determined by surface facts and surface configurations. The driving forces in phonological and morphophonemic change will therefore remain for us the traditional "package" of sound change in the narrow sense, which alters the character of the data new speakers use to construct their phonological grammars; and re- and misanalysis of the relations among surface forms, which

69 One of Kiparsky's objections to the proterokinetic type is that it "lacks typological parallels" (154). Typological plausibility is, of course, an important criterion for evaluating reconstructions, but it must be invoked with care. What would constitute a "typological parallel" to a proterokinetic stem? If we look for a language (outside the contested IE sphere) with stems in which a) the accent alternates between a root and stem-formative affix, and b) the unaccented vowel is in each case deleted (as in **mén-ti- ~ *mn̥-téi-*), it is true that we may come up empty-handed. But there are likewise probably not many languages outside the IE sphere with a) stems consisting of a root plus an affix, b) a free accent system, and c) stem-internal deletion of vowels *without* associated accent movement (as in **mn̥-tí- ~ *mn̥-téi-*). PIE, by common consent, must either have been of the first type or the second.

induces changes in the grammar of the type traditionally called "analogical."[70] The exposition that follows is based on the premise that the sound change and analogy model, if sensibly employed in the context of a modern understanding of language structure, continues to offer the best practical way forward through the maze of changes that make the prehistory of the BSl. accent one of the most challenging subjects in IE linguistics.

70 My position is thus very close to that of Hale 2007. An example that will loom large in later chapters may help clarify the issues. According to a standard view that Kiparsky and I share, formerly oxytone/hysterokinetic *o*-, *ā*-, *i*-, and *u*-stems became "mobile," i.e., descriptively amphikinetic in a particular sense, in Balto-Slavic. Exactly how this happened is a much-discussed problem. Kiparsky (157) offers a grammar-internal explanation: at some point in the early history of Balto-Slavic, he suggests, stems, as opposed to words, ceased to be subject to the Oxytone Rule. Formally, this looks like an elegant solution. Yet trying to understand a historical event as a self-contained grammar change, unmediated by surface forms, raises theoretical issues of its own. The generalized blocking of the Oxytone Rule in pre-Balto-Slavic could not have "just happened"; no serious theory of language change can be so powerful as to allow grammars to mutate in a wholly unconstrained manner. Something, therefore, must have made the blocking of the Oxytone Rule in Balto-Slavic—granting for the moment that this is what actually happened—a more natural development than any of a thousand other imaginable grammar changes that would never in fact have taken place, such as the replacement of the BAP by a right-handed mirror image of itself, or the addition of a lexical accent to the never-accented ending of the nom. pl. (/-es/ → /-és/). The traditional apparatus of sound change and analogy in no way precludes Kiparsky's idea that the Oxytone Rule ceased to apply at the stem level in the synchronic mental grammars of speakers. It simply imposes a surface-based criterion—the existence of exemplars to serve as models—for distinguishing the relatively small subset of grammar changes that are plausible within a given language from the vastly larger number that are not. A general *non*-surface-based criterion that did the same work would be very welcome, but it remains to be seen whether "grammar optimization," Kiparsky's candidate for the driving force behind analogical change (Kiparsky 2003), can succeed in this role without likewise making extensive reference to surface configurations. The actual origin of BSl. mobility—arguably the central problem of BSl. accentology and easily the most difficult one—is the subject of ch. 4.

CHAPTER 2

Balto-Slavic: The Descriptive Picture

A historical discussion of Balto-Slavic proper would ideally begin with an account of the descriptive situation in Proto-Balto-Slavic and move directly to the question of its relationship to PIE. Unfortunately, this ideal is not attainable. No BSl. language preserves the Proto-BSl. accentual system, which is only accessible by comparative reconstruction. The purpose of the present chapter is to establish and present a coherent view of what, accentually speaking, Proto-Balto-Slavic looked like. Technical terminology here and in later chapters is collected and summarized in the Appendix following ch. 7.

We have three main sources of information for the Proto-BSl. accent: Lithuanian, Latvian, and (Late) Proto-Slavic,[1] to which Old Prussian can be added as an occasionally useful fourth. Lithuanian (including its divergent Žemaitian dialects) and Latvian form the Eastern branch of Baltic; Old Prussian, poorly transmitted but still valuable, is our only specimen of West Baltic. Proto-Slavic is a reconstructed language; yet, thanks to the conservatism of the individual Slavic languages, the relatively shallow time depth of the family as a whole, and the labors, sometimes inspired, of twentieth-century Slavic accentologists, many aspects of the PSl. system are as well known to us as if the language were actually attested. The same cannot be said for Proto-Baltic or Proto-East Baltic. Despite the well-deserved reputation of Baltic, and Lithuanian in particular, for archaism, Lithuanian and Latvian took very different prosodic paths after their separation. As will emerge in what follows, the latest common ancestor of the Lithuanian and Latvian accent systems was effectively unchanged from the common parent of Balto-Slavic as a whole. For presentational purposes, our discussion will begin with Lithuanian, still the most conservative individual language overall, then move to Slavic, and finally turn to Latvian and Old Prussian.

1 For my use of the term "Proto-Slavic," which partly overlaps with "(Late) Common Slavic" as used by many Slavicists, see 2.2.

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2.1 Lithuanian

2.1.1 *Acute and Circumflex*

The Lithuanian accent system, by virtue of being mora-based, superficially recalls that of Greek, although the details are very different.[2] All words, clitics aside, bear a single dynamic accent, which, unlike the Greek accent, can stand on any syllable. If the nucleus of an accented syllable is a short vowel (*a, e, i, u*) it receives a high tone (H) and is realized with a rise in pitch, indicated in the standard Lithuanian notational system by a grave accent (/ˋ/): *àš* 'I', *vèsti* 'to lead', *vìsa* 'everything', *kùbilas* 'tub'. If the nucleus is long—i.e., if it is one of the etymological long vowels (*ė, o, y, ū*), the historically nasalized vowels (*ą, ę, į, ų*), the falling diphthongs (*ai, ei, au, ui*), the rising diphthongs (*ie*, *uo* < earlier **ę̄, *ǭ*), or the liquid and nasal diphthongs (*ar, el, im, un*, etc.)—then either the first or the second mora may be tonally prominent. If the first mora is prominent, it carries a high tone and the acoustic effect is that of a falling tonal contour or "intonation" (see below). This is the so-called "acute" accent, denoted by the acute symbol (/ˊ/) on long monophthongs and on the first element of most diphthongs, but by a grave (/ˋ/) on the *i* or *u* of liquid and nasal diphthongs: *mė̃nuo* 'month', *sū́nūs* 'sons', *galąsti* 'to sharpen', *léisti* 'to let', *láimė* 'fate', *píenas* 'milk', *dúoti* 'to give', *gérti* 'to drink'; but *kùrti* 'to create', *pìlnas* 'full', *gìmti* 'to be born'.[3] If the second mora is prominent, the acoustic effect is traditionally described as rising, but has been shown in phonetic studies to be better characterized as non-falling.[4] The rising/non-falling contour defines the "circumflex" accent, denoted by a tilde (/˜/) on monophthongs and the second element of diphthongs: *ẽjo* 'went', *siū̃tis* 'blow', *išsigą̃sti* 'take fright', *neĩ* 'neither', *laĩsvas* 'free', *diẽvas* 'god', *nuõ* 'from', *kuř̃čias* 'deaf', *viĨkas* 'wolf', *giñklas* 'weapon'. In moraic terms, the Lithuanian acute and circumflex accents have the reverse values from the accents that go by the same names and employ the same diacritics in Greek:

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2 The description of the Lithuanian accent system that follows, like the description of the Latvian system in 2.3.1, is based on standard handbook accounts. Petit 2010: 52–75 gives a more detailed presentation.

3 The notational oddity of *gérti* vs. *kùrti* has a phonetic explanation. When the first element of a liquid or nasal diphthong is a non-high vowel, it is redundantly lengthened and bears part of the falling tonal contour, denoted by the acute diacritic. When the first element is a high vowel there is no lengthening, and the *i* or *u* simply has high pitch, marked by a grave. Cf. Petit *op. cit.* 63–4.

4 See Dogil and Möhler 1998.

Lith. acute	μ | H	μ	vs. Greek acute	μ	μ | H
Lith. circumflex	μ	μ | H	vs. Greek circumflex	μ | H	μ

When the acute : circumflex contrast is neutralized, the circumflex emerges as the unmarked member of the opposition. The neutralization is seen in two environments:

(1) in final syllables, where an expected acute accent is either eliminated through shortening of the vowel (e.g., *gerà* 'good' (nom. sg. fem.) < **geró*; cf. definite form *geró-ji*)[5] or converted to a circumflex (e.g., 1 sg. fut. *galẽsiu* 'I will be able', 2 sg. *galẽsi*, but 3 p.[6] *galẽs* for **galẽs*);[7]

(2) in non-final syllables, where accented short *a* and *e* (i.e., *à* and *è*) are non-contrastively lengthened and receive a circumflex (e.g., *tãkas* 'path' for **tàkas*, *mẽtas* [ɛ:] 'year' for **mètas*).[8] There is no corresponding acute lengthened **á* or **é*, although phonetic acute [a:] and [ɛ:] occur in the language as a result of the loss of nasality in the originally nasalized vowels *ą́* and *ę́*.

The non-contrastive accent on short vowels and the circumflex accent on long vowels and diphthongs can thus be phonologically identified under the rubric "non-falling." At a just-sub-surface level of phonological structure, Lithuanian has two, not three accents: *non-acute*, or *non-falling*, potentially occurring on

5 Proto-Baltic **ā* gave *o* [ɔ:] in Lithuanian, and *o* continues to pattern synchronically as the long counterpart of *a* in many contexts.

6 3 p. = 3 sg. + du. + pl. Like the other Baltic languages, Lithuanian makes no distinction of number in the third person.

7 Violations of the ban on acute-accented final syllables are mainly confined to cases of late syncope or apocope, as in the 2 sg. imperative (e.g., *dúo-k* 'give!', *šáu-k* 'shoot!', etc. < **-ki*) and the dat. pl. of nouns and pronouns (*-áms*, *-ìms*, *-íems*, etc. < OLith. *-àmus*, etc.).

8 The synchronic rule is not exceptionless. Lengthening does not occur, e.g., in the infinitives to roots ending in an obstruent (*vèsti* 'to lead', *dègti* 'to burn', *kàsti* 'to dig', etc.), in accented preverbal particles (3 p. *nèveda* 'do(es) not lead', *pàveda* 'entrust(s)'), in the comparative adjectives in *-èsnis* (*gerèsnis* 'better'), and in the pronominal genitives *màno* 'my', *tàvo* 'thy', and *sàvo* '(one's) own'. A full list of exceptions is given by Ambrazas 2006: 62–3.

all long and short nuclei in all positions;[9] and *acute*, or *falling*, occurring only on long nuclei in non-neutralizing environments.

At this point some terminological conventions may be in order. The tonal contour of an accented long vowel or diphthong (rising, falling, etc.) will be called its *tone* or *intonation* in what follows. (Note that the traditionally used term "intonation" refers in BSl. accentological usage to a property of nuclei or (by extension) syllables, not of phrases or sentences.)[10] *Accent*, likewise a property of nuclei and syllables, is in principle distinct from tone/intonation; the two are linked in standard Lithuanian by the fact that only accented vowels can bear a phonetically salient tone. Where no confusion would result, we will continue to use the terms "acute accent," "rising accent," etc. to refer to the combination of accent and the corresponding tonal contour. Where there is need to specify the location of the prominence *within* an accented long vowel or diphthong—the "docking point" of the high tone—we will speak of the position of the *ictus*. In the case of accented short vowels, the position of the accent and ictus are the same.

2.1.2 *Acuteness as a Property of Morphemes*

Movement of the accent between the root and a later, usually final, syllable is a common feature of Lithuanian inflection, especially in the declension of nouns and adjectives. The accent type associated with the root, however, never changes.[11] Thus, in the nouns *galvà* 'head' and *dienà* 'day', where the accent is on the ending in some forms and on the root in others, the segmental declensions are identical (both are *ā*-stems), but the root-accented forms of *galvà* are consistently acute, while the root-accented forms of *dienà* are consistently circumflex. Compare:

accent on ending			accent on root		
nom. sg.	*galvà*	*dienà*	acc. sg.	*gálvą*	*diẽną*
gen. sg.	*galvõs*	*dienõs*	dat. sg.	*gálvai*	*diẽnai*
loc. sg.	*galvojè*	*dienojè*	nom. pl.	*gálvos*	*diẽnos*
etc.			etc.		

9 We can say, in other words, that nuclei bearing the non-acute/non-falling accent contain one or two moras, the first of which receives an "H" specification:

μ (μ)
|
H

Contrast the situation in Greek (1.3.1), where it is the acute that is unmarked.

10 Similarly, a nucleus consisting of more than one mora, and hence capable of bearing tone/intonation, is said to be "intonable."

11 *Derivational* processes, on the other hand, can and do involve changes of accent type. This is the phenomenon known as "metatony," on which see 3.4.1.

The difference between *galvà* and *dienà* is traditionally captured by saying they belong to different accent classes (classes 3 and 4; see below). In the synchronic grammar of Lithuanian, the root syllable of *galvà*, but not that of *dienà*, is lexically marked for acuteness. The acuteness feature surfaces under the accent in root-accented forms like *gálvą, gálvai*, etc., but not in ending-accented forms like *galvà*, *galvõs*. In *dienà*, where there is no lexical marking for acuteness, the root-accented forms surface as circumflex/non-acute.

Acuteness must also be lexically specified for endings. In the reduced data set above, the gen. sg. ending *-õs* (*galvõs*, *dienõs*) has a circumflex accent, pointing to a lexical representation without marking for acuteness. The nom. sg. in *-à* (*galvà, dienà*), on the other hand, reflects underlying acute-marked **galvó, *dienó*, with shortening of the acute-accented long vowel in a final syllable. When added material renders the acute-accented long vowel nonfinal, as in the definite form of adjectives (e.g., *gerà dienà* 'a good day', but *gerója̧i dienà* 'the good day'; cf. 2.1.1), it resists shortening and surfaces overtly. The non-acute-marked ("circumflex") /-o:s/ (gen. sg.) and the acute-marked /-o:/$_{[+\text{acute}]}$ (nom. sg.) define two larger classes of endings. Other long endings of the "circumflex" type include

i-stem gen. sg. *-iẽs*, e.g., *širdiẽs* (: *širdìs* 'heart')

consonant stem nom. sg. *-uõ*, e.g., *piemuõ* 'shepherd boy'

u-stem gen. sg. *-aũs*, e.g., *sūnaũs* (: *sūnùs* 'son')

gen. pl. *-ų̃* (all stem classes), e.g., *galvų̃, širdžių̃, sūnų̃*

o-stem (adverbial) loc. sg. *-iẽ*, e.g., *namiẽ* 'at home'

Other endings of the "acute" type are

adj. nom. pl. masc. *-ì* (definite form *-íe-ji*), e.g., *gerì, -íeji*

1 sg. pres. *-ù* (with reflexive particle *-úo-si*), e.g., *randù*, *-úos*(*i*) 'I find'

2 sg. pres. *-ì* (with reflexive particle *-íe-si*), e.g., *randì*, *-íes*(*i*)

o-stem acc. pl. *-ùs* (definite form *-úos-ius*), e.g., *gerùs*, *-úosius*

ā-stem acc. pl. *-às* (definite form *-ą́s-ias*; but see ch. 3, note 7 and 5.1.8), e.g., *geràs*, *-ą́sias*

There is no third option; all endings with an intonable (i.e., long) nucleus are either [+acute], in which case they pattern like the *-à* < **-ó* of *galvà*, or they are not marked for acuteness, in which case they pattern like the *-õs* of *galvõs*.

2.1.3 *The Autonomy of Acuteness*

If the Lithuanian accent system were simply as described thus far, with an underlying mora-based contrast between two tones or intonations that surface under the accent, it would be no different in principle from Greek. The contrast between the ending of nom. sg. *galvà*, here informally represented as /-o:/$_{[+acute]}$, and that of gen. sg. *galvõs*, here represented as /-o:s/, exactly recalls the difference between Gk. nom. sg. *agathḗ* and gen. sg. *agathẽ̂s*, where the underlying forms might be represented as /-e:/ and /-e:s/$_{[+circumflex]}$, respectively. But the situation in Lithuanian is more complicated than in Greek. In Lithuanian, unlike Greek, the acute : circumflex contrast is phonologically relevant, and was originally implemented phonetically, even in unaccented syllables (see below). The "autonomy" of the [+acute] feature in Lithuanian can be seen most clearly in the fact that the shortening of acute-marked vowels in final syllables is not limited to cases where the final syllable is accented. Thus, the shortening of the final acute **-ó* in nom. sg. *galvà* and *dienà* is also seen in the "immobile" *ā*-stem *várna* 'crow', where the accent remains on the [+acute] root syllable (accent class 1).[12] The same is true, *mutatis mutandis*, for the other acute-marked endings:

accent on ending		accent on root/stem
adj. nom. pl. masc. *gerì*, *-íeji*,	but also	*turtìngi*, *-ieji* 'rich'
1 sg. pres. *randù*, *-úos*(*i*),	"	*láukiu*, *-uos*(*i*) 'I wait/expect'
2 sg. pres. *randì*, *-íes*(*i*),	"	*láuki*, *-ies*(*i*)
o-stem acc. pl. *geràs*, *-úosius*,	"	*turtìngus*, *-uosius*
ā-stem acc. pl. *geràs*, *-ą́sias*,	"	*turtìngas*, *-ąsias*

12 More generally, accent class 1 encompasses all nominal stems in which the accent is stably fixed on a non-final syllable. In the native component of the lexicon, the overwhelming majority of non-derived stems that satisfy this definition are like *várna*, disyllabic nouns and adjectives with an acute accent on the root syllable. When the stem is trisyllabic or longer, either because of the presence of an overt derivational element or for some other reason, other configurations also qualify; cf., e.g., *núotaka* 'bride' (invariant acute accent on a prefix), *darýba* 'formation' (invariant acute accent on a suffix), *ãšara* 'tear' (invariant non-acute initial accent in a trisyllable).

There are no exceptions. The generalization can be expressed as a synchronic rule: *acute-marked vowels are shortened in final syllables* regardless of the position of the accent. This is the synchronic form of the rule known as **Leskien's Law**.

In the classic 1881 formulation of Leskien's Law as a sound change, no distinction was (or could be) made between "acute-marked" and "acute"; what Leskien saw as having been shortened was simply an "acute long final syllable."[13] But the question immediately arose: how could a final syllable be acute if it was not accented? The answer generally supplied until the mid-twentieth century, at least by scholars who accepted the rule,[14] was that PIE had accent-independent "intonations" in final syllables, and that these were reflected not only in the acute : circumflex contrast in Balto-Slavic, but also in the contrast between acute and circumflex endings in Greek, the bimoric : trimoric distinction in Germanic (1.5.1), and perhaps even the distinction between ordinary and distractable long vowel endings in Indo-Iranian (1.2.3). The independent basis for assuming inherited tonal contrasts in Greek, Germanic, and Indo-Iranian was effectively eliminated by the advent of the laryngeal theory. Even in Lithuanian, where a full discussion of the origin of acuteness will be deferred to ch. 3, there is an obvious link between the intonational marking of an ending and its historical "rewrite" in laryngeal terms. Thus, the acute-marked ending of nom. sg. *galvà* < **-ó* goes back to PIE **-eh₂*, which gave a bimoric vowel in Germanic (Go. *giba* < **-ō*) and a vowel that took an acute accent in Greek (*agathḗ*), while the non-acute ending of gen. sg. *galvõs* goes back to PIE **-eh₂es*, which contracted to a probable trimoric vowel in Germanic (Go. *gibos* < **-ōz*) and a circumflex-marked vowel in Greek (*agathẽ̂s*). The phonetic interpretation of the [+acute] marking in the prehistory of Lithuanian is accordingly best not thought of as an overtly tonal feature. In principle, it could have been almost anything else, such as an increment or subtraction of length or some modification of phonation type.[15] For our purposes now it is sufficient to note that at the time of the operation of Leskien's Law there had to

13 "Stoßtonige auslautende lange Silbe wird im Lithauischen verkürzt. . ." (Leskien 1881: 189).

14 A famous denier of Leskien's Law was Kuryłowicz, whose accentological writings on Balto-Slavic, culminating in Kuryłowicz 1958: 163 ff. and, more particularly, Kuryłowicz 1968: 133–8, systematically reject the notion of an accent-independent factor corresponding to the traditional "intonation." Kuryłowicz's position on this question, and the ancillary assumptions it entails, have not fared well in the opinion of later scholars. See Stang 1966: 132–40 and Olander 2009: 110–12, with literature.

15 Cf. Stang 1966: 137 and 2.4.2 below.

be *some* kind of audible difference between acute-marked vowels, which were targeted by the rule, and non-acute-marked vowels, which were not.

2.1.4 *Saussure's Law*

Closely connected with Leskien's Law is the accent attraction rule formulated by Ferdinand de Saussure in 1896. Like Leskien's Law, **Saussure's Law** is both a synchronic rule and a sound change. Its effect is to move a non-acute (i.e., short or circumflex) accent one syllable to the right if the vowel in the target syllable is marked for acuteness. Saussure's own example was *laikýti* 'to hold', where the accent moves from the non-acute-marked root (pres. 3 p. *laĩko*) to the acute-marked *-y-* of the infinitive suffix; he contrasted *ráižyti* 'to cut', where the root is acute-marked (cf. 3 p. *ráižo*) and there is no movement. In the majority of instances Saussure's Law involves shifting the accent to a final syllable; in such cases the acute-marked vowel that receives the accent is subsequently shortened by Leskien's Law. Thus, in verbs, where monosyllabic present stems are always underlyingly root-accented and the 1 sg. and 2 sg. endings are underlyingly /-o:/$_{[+\text{acute}]}$ and /-e:/$_{[+\text{acute}]}$, respectively, the surface accent is always on these two endings unless the root is acute: cf. 1 sg. *supù* < **-ǫ́*, 2 sg. *supì* < **-ę́*, 3 p. *sùpa* (: *sùpti* 'rock'); *piešiù*, *-šì*, *piẽšia* (: *piẽšti* 'draw'); but *léidžiu*, *léidi*, *léidžia* (: *léisti* 'allow'). Here, even more than in the simple Leskien's Law cases, the rule is impossible to make sense of without the assumption of some accent-independent phonetic concomitant of acuteness.

In the realm of nominal morphology Saussure's accent rule accounts for the difference in the place of the accent between, on the one hand, nouns with underlying initial accent and acuteness marking on the root (*várna*; class 1); and, on the other, nouns with initial accent and no acuteness marking (e.g., *rankà* 'hand'; class 2):[16]

sg.	nom.	*várna*	***rankà***	< **-ó*	(cf. def. adj. *-óji*)
	gen.	*várnos*	*rañkos*		
	dat.	*várnai*	*rañkai*		
	acc.	*várną*	*rañką*		
	instr.	*várna*	***rankà***	< **-ą́*	(cf. def. adj. *-ą́ja*)
	loc.	*várnoje*	*rañkoje*		

16 The more general definition of accent class 2 is that it consists of stems in which the accent alternates between a non-acute-marked predesinential syllable and the acute-marked endings, which attract the accent by Saussure's Law. In trisyllabic and longer stems the predesinential syllable is not initial: cf. *mokyklà*, gen. *mokỹklos* 'school', *kultūrà*, gen. *kultū̃ros* 'culture', etc.

pl.	nom.	*várnos*	*rañkos*			
	gen.	*várnų*	*rañkų*			
	dat.	*várnoms*	*rañkoms*			
	acc.	*várnas*	***rankàs***	<	**-ą́s*	(cf. def. adj. *-ą́sias*)
	instr.	*várnomis*	*rañkomis*			
	loc.	*várnose*	*rañkose*			
du.	nom.-acc.	*várni*	***rankì***	<	**-ę́*	(cf. def. adj. *-íeji*)
	dat.	*várnom*	*rañkom*			
	instr.	*várnom*	*rañkom*			

In each of the four ending-accented case forms of *rankà* (shown in bold) the ending contains an acute-marked vowel that draws the accent.[17] Accent classes 1 and 2 are thus basically the same. Both, in disyllabic stems, are underlyingly accented on their first syllable; the only difference is that class 2 stems, where the root is not [+acute], are subject to the synchronic version of Saussure's Law.

2.1.5 *Mobility*

Saussure's Law also accounts for the difference between classes 3 (*galvà*; acute-marked root) and 4 (*dienà*; non-acute-marked root):

sg.	nom.	*galvà*	*dienà*	[<	**-ó*]
	gen.	*galvõs*	*dienõs*		
	dat.	*gálvai*	*diẽnai*		
	acc.	*gálvą*	*diẽną*		
	instr.	*gálva*	***dienà***	<	**-ą́*
	loc.	*galvojè*	*dienojè*		
pl.	nom.	*gálvos*	*diẽnos*		
	gen.	*galvų̃*	*dienų̃*		
	dat.	*galvóms*	*dienóms*		
	acc.	*gálvas*	***dienàs***	<	**-ą́s*
	instr.	*galvomìs*	*dienomìs*		
	loc.	*galvosè*	*dienosè*		
du.	nom.-acc.	*gálvi*	***dienì***	<	**-ę́*
	dat.	*galvóm*	*dienóm*[18]		
	instr.	*galvõm*	*dienõm*		

17 The vocative and illative, which are not helpful in the present context, are omitted.

18 With an unusual acute-accented final syllable, apocopated from **-ómV*. Cf. note 7.

Here too, the final accent in the instr. sg., acc. pl., and nom.-acc. du. is an effect of Saussure's Law. But the other, more numerous ending-accented forms in the declension of *galvà* and *dienà* cannot be so explained; nor is there any obvious sound law that would explain the root-accented forms by some *leftward* shift, as if dat. sg. *gálvai*, *diẽnai* were derived from earlier **galvaĩ*, **dienaĩ*. In fact, accent classes 3 and 4 are "mobile" in the technical BSl. sense: they exhibit a morphologically regulated movement of the accent between the first syllable and the last, where the only synchronic determinant of the final position of the accent in case forms like the nom. sg., gen. sg., etc. is the lexical specification of the relevant endings as accent-attracting, or "dominant."[19] The distribution of root-accented and ending-accented forms in a mobile paradigm is known in the terminology of the Moscow Accentological School as the accentual "curve" (*krivaja*) of that paradigm.[20] In Lithuanian, as will be discussed in ch. 5, the (pre-Saussure's Law) accentual curves of mobile *ā*-stems, *ē*-stems, *i*-stems, and *u*-stems are virtually identical, while the *o*-stems, with root accent in the nom. sg. and gen. sg. (e.g., *diẽvas*, *diẽvo* vs. *galvà*, *galvõs*) and accent on the ending in the nom. pl. (*dievaĩ* vs. *gálvos*), stand somewhat apart.

In a very general way, the mobility of Lithuanian nouns of classes 3 and 4 resembles the mobile paradigms of PIE, especially those of the amphikinetic type (1.1.2). In detail, however, the facts are very different. Outside Lithuanian, no IE group other than Slavic has mobile *ā*- or *o*-stems; even the *i*- and *u*-stems, which were mostly originally proterokinetic in PIE, are stably immobile

19 Disyllabic class 3 nouns like *galvà* have an acute-marked root syllable with alternation of the accent between the root and the dominant endings. Longer class 3 stems likewise show alternation between the first and last syllables—at least in the standard language—but the first syllable is not necessarily acute: cf. *pamokà*, acc. *pãmoką* 'lesson' beside *uodegà*, acc. *úodegą* 'tail'. Class 4 stems are simultaneously mobile *and* susceptible to Saussure's Law. In practice, class 4 stems are all disyllabic non-acute words like *dienà*.

The four Lithuanian accent classes for nouns and adjectives can thus be characterized as follows:

class 1: fixed non-final accent.

class 2: fixed non-final accent except on endings that trigger Saussure's Law.

class 3: accent on endings in morphologically marked dominant cases; otherwise initial.

class 4: accent on endings that trigger Saussure's Law *and* in dominant cases; otherwise initial.

20 This is the usage, e.g., in Dybo 1981, the canonical presentation of the Moscow system in its "classical" form. The term "accentual curve" is already found in Illič-Svityč 1963: 4 (= Illič-Svityč 1979 [1963]: 149).

outside Slavic in the post-PIE period.[21] In PIE, the nom. sg. and acc. sg. always patterned together as strong cases, unlike the gen. sg., dat. sg., and others, which were weak. In Lithuanian, by contrast, the nom. sg. in mobile paradigms is usually ending-accented, and hence in traditional terms "weak," while the dat. sg. is always accented on the root, and hence in traditional terms "strong." These and other distinctive characteristics of mobility in Lithuanian make it, along with accent-independent acuteness, one of the basic features that sets Lithuanian apart from the classical IE languages.

2.1.6 *Žemaitian*

An interesting perspective on the structure and prehistory of the Lithuanian prosodic system is afforded by the Žemaitian, or Low Lithuanian dialects.[22] As a group, these dialects are characterized by retraction of the accent from final syllables under prosody-sensitive conditions that vary from individual dialect to dialect. The well-described Northwest Žemaitian dialect cluster centering on the town of Kretinga can serve as an example. Here the inherited circumflex has a different contour from its value in the standard language (standard Lith. *laũkas* 'field' (rising/non-falling) = Kr. *lã·uks* (falling)), and the place of the standard Lithuanian acute is taken by the "broken tone," marked by a glottal catch (/ˆ/; cf. standard Lith. *káulas* 'bone' = Kr. *kâ·uls*). When the accent is retracted from a non-acute final onto the root syllable, however, the contour of the retracted accent is not identical with either of the two inherited intonations. The realization of the retracted accent depends on whether the root is marked for acuteness. If the root is [+acute], it receives the "rising acute" intonation (/ˊ/), as, e.g., in *á·rklĩs* 'horse' for standard Lith. *arklỹs* (acc. *árklį*). If it is not acute, it receives the "middle tone" (/ˆ/), as in *rộ·nkà* for standard *rankà* (acc. *rañką*). In the latter two cases a secondary accent is retained on the final syllable.[23]

There are several points of interest in this picture. First, the values of the "old" circumflex and acute in Žemaitian—falling and glottal, respectively—are primary evidence, to be set alongside the evidence of other sources, for the value of the intonations in Proto-Lithuanian and earlier. As will be seen, the

21 Unless the Verner doublets of Germanic go directly back to PIE mobile stems; cf. 1.5.2.

22 The information that follows is taken from Petit: 2010: 71–75, Derksen 1991: 46, and Stang 1966: 137–40. All are indebted to Aleksandravičius 1957: 97–107.

23 According to Derksen 2014: 7–8, the system just described is not found in Kretinga itself, but in the nearby area of Mosėdis and Salantai. Phonologically, the secondary accent on the final syllable is probably still underlyingly primary, with the rising acute and middle tone its realizations in environments where the conditions for retraction are met.

fact that the circumflex is falling in Latvian and apparently Old Prussian (see 2.3.2) as well as Žemaitian gives reason to believe that the falling contour was original in Baltic, and that the rising/non-falling contour of the circumflex in standard Lithuanian is an innovation.[24] So too for the acute: the association of acuteness with "broken" (i.e., glottalized) tones in both Žemaitian and Latvian (see 2.3.1) has consequences for our reconstruction of the original value of acuteness. But the most revealing feature of Žemaitian is the distinctness of the two retracted accents. At the time of the retraction from the ending to the unaccented root syllable in the Žemaitian equivalent of Lith. *arklỹs*, some phonetic feature of acuteness must have been present in the root syllable that caused the retracted accent to surface with rising acute (*á·rklĩs*) rather than middle tone (**â·r-*). Žemaitian thus provides further proof, supplementing the evidence of Leskien's Law and Saussure's Law, that acuteness and accent were completely independent variables.

2.1.7 *Summary*

It is customary in BSl. accentology to frame historical developments in terms of pitches and contours: rising tone, falling tone, lengthened tone, broken tone, etc. These features indubitably have phonetic reality. But in Lithuanian, at least, they are epiphenomenal. In classical phonemic terms, standard Lithuanian could be said to have two accents, one falling and one non-falling. At a slightly deeper level of analysis it has a privative feature of acuteness and a lexically or morphologically assigned single accent, the surface position of which is subject to low-level processes like Saussure's Law. When the accent is assigned to a nucleus marked [+acute], the ictus attaches to the first mora and the result is a falling tone; otherwise it attaches to the second or only mora, and the result is a non-falling tone. Acuteness in this sense is not merely a descriptive artifice. While lacking accent-independent phonetic substance in modern standard Lithuanian, it was clearly physically present in unaccented long nuclei at the time of the historical operation of Saussure's Law, Leskien's Law, and, later, the Žemaitian retraction.

2.2 Slavic

It is difficult to give a segmentally and prosodically consistent picture of Slavic phonology in the half millennium before the final dissolution of the family. The period between the early pre-dialectal stage conventionally called

24 as is indeed the *communis opinio*.

"Proto-Slavic" and the later dialect continuum known as "Late Common Slavic" was so rich in sound changes and so resistant to neat chronological layering that it is virtually impossible to synchronize segmental with prosodic developments. The approach taken here accordingly follows the mixed practice of works like Lehfeldt 2009. For general convenience, preforms will be given segmentally in an OCS-like Late Common Slavic shape, with reduced vowels (i.e., the yers ъ, ь) for earlier **i*, **u*; *y* for earlier **ū*; *u* and *ě* for **au* and **ai*; etc.[25] On the accentual plane, however, the stage represented will be that of a few centuries earlier—the PSl. period immediately following the onset of Dybo's Law, but prior to the later retractions that produced the neoacute accent (these terms will be defined below). Unless otherwise noted, the etymological long vowels (*ě*, *a*, *i*, *u*, *y*; *ę*, *ǫ*) will be assumed to be long except in final syllables, and the etymological short vowels (*e*, *o*, ъ, and ь) will be assumed to be short. Etymological long vowels in final syllables will be assumed to be short as well, but here there were apparent exceptions whose historical interpretation is a matter of discussion.[26] The chronologically hybrid dialect thus defined will be referred to, imprecisely but usefully, as "P(roto-)Sl(avic)."

2.2.1 *Rising and Falling Accents*

In Proto-Slavic, as in Lithuanian, non-clitic words in isolation could be accented on any syllable. An accented first syllable could, if long, be rising ("acute") or falling ("circumflex"); if short it could only be falling. Examples:

long rising (/˝/): **dắti* 'to give', **lĺpa* 'linden', **vőrna* 'crow', **zę́tъ* 'son-in-law'
long falling (/ˆ/): **mę̂so* 'meat', **gôlvy* 'heads' (nom.-acc. pl.), **zîmǫ* 'winter' (acc.), **sŷnъ* 'son'
short falling (/ˇ/): **vȅdǫ* 'I lead', **drȇvo* 'tree', **nȍsъ* 'nose', **bȍralъ* 'having taken' (ptcp.)

25 The main segmental "archaism" of our preforms, as usual in Slavistic works, will be the retention of unepenthesized, unmetathesized groups of the structure *CeRC*.

26 We thus deliberately sidestep a range of questions surrounding the late Proto-Slavic shortening or partial shortening of etymological long vowels in various positions relative to the location and contour of the accent. These are disputed issues, highly important for the later history of the Slavic languages but largely irrelevant (despite the cases discussed in 5.4.2 and note 42 below) for an understanding of how the earliest Slavic accentuation system emerged from that of Proto-Balto-Slavic and PIE. See, e.g., Stang 1957: 36–42, 48–55, Holzer 2009, Kapović 2010, and Olander 2015: 43–4, with references.

In non-initial syllables the picture is slightly less straightforward. There is no evidence for a contrast on historical short vowels, where all accents were rising:

short rising (/ˋ/): **naròdъ* 'people', **dvьrьjǫ* 'door' (instr. sg.), **vedetь* 'leads'

There is some dispute, however, as to whether there was a rising : falling contrast in the case of word-internal long vowels. It will be assumed here that such a contrast did exist at least in medial syllables, and that forms like inf. **prosĭ́ti* 'to ask' (rising tone) constituted a near-minimal pair with 3 sg. **prosîtь* (falling tone).[27] By actual Late Common Slavic times the internal falling accent had been eliminated by retraction to the preceding syllable ("Stang-Ivšić's Law" (2.2.3.3); cf. R inf. *prosít′* : 3 sg. *prósit*), and all non-initial accents, except those arising by new contractions, were rising.

The practice of specifying accented nuclei as long rising, long falling, short rising, and short falling originated in the context of the modern western South Slavic languages (BCS and Slovenian), where vowel length and tonal contour are relevant, or potentially relevant, in most positions. In Proto-Slavic, however, the rising : falling contrast had an extremely low functional yield outside of initial syllables, and quantitative changes were underway that tended to shorten long vowels in final syllables and elsewhere, rendering them non-intonable (cf. note 26). It is both awkward and unnecessary, therefore, to have to choose between writing, e.g., **vodā́* (long rising; older) or **vodà* (short rising; younger) for the nom. sg. of the word for 'water', when the only phonologically relevant fact about this form for most purposes is that the accent was on the second syllable. Accordingly, we will follow the modern convention of using a simple vertical accent (/ˈ/) to indicate an accent without specifying its contour or the duration of the associated vowel. As employed in PSl. preforms, this symbol will serve as a sort of "accentual archiphoneme" in non-initial syllables, representing the neutralization product of all contrasts in final syllables (hence **vodȁ, *vedetь*) and of the rising : falling contrast on short vowels in interior

27 Both reconstructions have been challenged. For Kortlandt and his school, the traditional long rising accent in **prosĭ́ti, *dā́ti*, etc., was short rising (**prosìti, *dàti*; so Derksen 2008 svv.)—a view indirectly linked to these scholars' conception of acuteness as arising from a segmental glottal stop (see, e.g., ch. 3, note 45). For 3 sg. **prosîtь* the Moscow School avoids use of the circumflex symbol, distinguishing the accent on the medial non-acute vowel from the proper circumflex of **mę̂so, *gôlvy, *zîmǫ*, etc. This distinction is not in my view necessary; cf. Lehfeldt 2009: 65 and the discussion below, especially 6.4.2–4.

syllables (hence **narȍdъ, *dvьrь̀jǫ*). We will continue to use the acute and circumflex symbols on interior long vowels (**prosíti, *prosîtь*).

2.2.2 *Enclinomena*

Words with initial falling accent have an additional property that figures prominently in analyses of Slavic phonology. In the widely adopted terminology of Jakobson and the Moscow Accentological School, they are "enclinomena," i.e., they behave as if they lacked an inherent accent of their own. In the synchronic phonology of Proto-Slavic, a non-clitic word could be marked with a lexically or morphologically assigned accent that surfaced phonetically as rising (**dấti, *prosíti*), falling (**prosîtь*), or non-contrastive (**narȍdъ, *vedetь̀*, etc.). But it could also have *no* underlyingly marked accent, in which case it received a surface falling accent on its first syllable (**gôlvy, *vȅdǫ*, etc.). The initial falling accent in Slavic was in this respect phonologically comparable to the recessive accent in Greek (1.3.2)—a default prominence assigned by rule to a word that would otherwise have no accent at all. In Slavic, however, unlike Greek, words of this type manifest their underlying accentlessness in a unique way: they "donate" their accent to an adjacent enclitic or proclitic. If both types of clitics are present, the enclitic "wins" and the accent moves rightward; otherwise it moves to the first proclitic. This rule is called **Vasil'ev-Dolobko's Law.**[28] Its operation can be seen in the way the enclinomena **gôlvy* and **vȅdǫ* combine with the proclitics **za* 'behind', **ne* 'not', and **i* 'and', and the enclitics **že* (emphatic) and **li* (interrogative):

**gôlvy*: **zâ golvy, *î za golvy, *golvy žė̀, *i za golvy žė̀*[29]
**vȅdǫ*: **zâvedǫ* ('I will seduce'), **nȅ vedǫ, *î ne zavedǫ, *zavedǫ lì*

It will be noted that when the initial falling accent of an enclinomenon is displaced to the first syllable of a proclitic chain, the accent on the proclitic is falling as well.

2.2.3 *Stang*

Stang's *Slavonic Accentuation* (1957) is probably the single most influential book ever written in the field of Slavic accentology. Breaking with the purely diachronic, sound law-obsessed culture of the field in the early twentieth

28 See also Lehfeldt 2009: 34, whose usage I follow. Olander (2009: 130) more correctly calls the leftward movement "Šaxmatov's Law" and restricts the term "Vasil'ev-Dolobko's Law" to the rule covering configurations containing an enclitic.

29 Examples partly based on Carlton 1991: 190.

century, Stang presented a synchronic classification of Proto-Slavic accent patterns so simple and compelling that his analysis has served as the touchstone for all mainstream accounts since.[30] Even though his efforts to reconstruct backwards from Proto-Slavic to earlier linguistic stages were less successful, the book as a whole stands as an elegant illustration of how the best historical work often incorporates a synchronic perspective.

2.2.3.1 *Accent Paradigm a*

At the heart of Stang's system is the observation that all inflectable words in Slavic—in effect, the overwhelming majority of non-clitic forms—fall into one of three accent types, which he calls a, b, and c. We will henceforth speak of accent paradigms (AP) a, b, and c. The Slavic accent paradigms are the descriptive analogues of the four Lithuanian accent classes. But while the Lithuanian classes embrace only nouns and adjectives and emerge straightforwardly from the data, the Slavic paradigms encompass verbs as well as nouns and, with the exception of AP a, are typically overlaid and obscured by secondary developments in the daughter languages.

AP a is characterized in disyllabic nominal stems by a stable initial acute (= long rising) accent. An example is **vőrna* 'crow' (> R *voróna*, BCS *vràna*, Cz. *vrána*):[31]

	sg.			pl.		
nom.	**vőrna*	cf. Lith.	*várna*	**vőrny*	cf. Lith.	*várnos*
gen.	**vőrny*	"	*várnos*	**vőrnъ*[32]	"	*várnų*
dat.	**vőrně*	"	*várnai*	**vőrnamъ*	"	*várnoms*
acc.	**vőrnǫ*	"	*várną*	**vőrny*	"	*várnas*
instr.	**vőrnojǫ*	"	*várna*	**vőrnami*	"	*várnomis*
loc.	**vőrně*	"	*várnoje*	**vőrnaxъ*	"	*várnose*

30 An exception is the system of Klingenschmitt, whose views, less influenced by Stang, can be found scattered through the dissertation of his student Schaffner (Schaffner 2001). Time and space will not permit discussion of this approach here.

31 The defining property of AP a for Stang was constant root stress. For certain purposes, however, the definition can be extended to include words like **moldĭ́ca*, acc. **-ĭ́cǫ* 'offshoot', **dobrȍta*, acc. **-ȍtǫ* 'goodness', etc.—polysyllabic derived stems with columnar accent on an internal syllable. Dual forms are omitted in the tables below.

32 The precise form of the gen. pl. ending in Slavic, here for convenience written **-ъ* but in fact prosodically distinct from a simple short reduced vowel, is discussed in 5.3.2.

PSl. **vőrna* (a) and Lith. *várna* (1) are obviously cognate, not just in lexical and morphological form, but in accentual profile. The correspondence is completely regular; other such pairs are **lĭpa* (a) 'linden' = Lith. *líepa* (1), **vl̃na* (a) 'wool' = Lith. *vìlna* (1), **bā́ba* (a) 'old woman' = Lith. *bóba* (1), and many more among the *o*-, *i*-, *u*- and consonant stems. The identity of the **vőrna* type in Slavic and the *várna* type (class 1) in Lithuanian is a fixed point in the otherwise chaotic array of real and apparent Baltic-Slavic accentual correspondences. The AP a = class 1 equation shows that the accents called "acute" in Slavic and Lithuanian, despite their very different phonetic character (rising in Slavic, falling in standard Lithuanian, "broken" in Žemaitian), go back to a common BSl. prototype.

AP a verbs (e.g., **rẽ́žati* 'to cut', pres. **rẽ́žǫ* < **rẽ́zjǫ*) are likewise defined in simple stems by a stable initial acute:[33]

sg.	1	**rẽ́žǫ*	pl.	1	**rẽ́žemъ*
	2	**rẽ́žeši*		2	**rẽ́žete*
	3	**rẽ́žetъ*		3	**rẽ́žǫtь*

Lithuanian affords no basis for setting up a full-blown system of accent types in the verb. But here too there is more than one accentual profile. The Lithuanian equivalent of PSl. **rẽ́žǫ*, likewise with fixed acute accent on the root, is seen, e.g., in the *į̋e*/*o*-present *láukiu* 'I wait', 2 sg. *láuki*, 3 p. *láukia*, 1 pl. *láukiame*, etc. A feature of "immobile" presents in Lithuanian is that the accent remains on the root in the presence of a preverb or proclitic (e.g., *išláukia* 'wait(s) out', *neláukia* 'do(es) not wait') and in the present participle (*láukiąs*, acc. *láukiantį*).[34]

2.2.3.2 *Accent Paradigm c and Meillet's Law*

The next-clearest accent paradigm is AP c, which most resembles the non-acute mobile class (4) in Lithuanian.[35] Typical examples are *vodà* 'water', with a short root, and *zimà* 'winter', with a long root, the latter cognate with Lith. *žiemà* (4) 'id.':

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33 Here too, the definition can be generalized to suffix-accented derived stems, such as the presents in **-ā́jǫ*, **-ḗjǫ*, etc.

34 Contrast the movement of the accent in the "mobile" type (cf. below). In *láukiu*, to be sure, the accent would have been drawn back to the acute root by Saussure's Law even if it had in principle moved to the prefix. But immobile presents with non-acute roots also retain the accent, as will be seen below.

35 And, as in Lithuanian, can be defined to include all non-acute stems with "bilateral" mobile accent.

	sg.				pl.			
nom.	**vodȁ*	**zimȁ*	cf. Lith.	*žiemà*	**vȍdy*	**zîmy*	cf. Lith.	*žiẽmos*
gen.	**vodȳ*	**zimȳ*	"	*žiemõs*	**vodъ́*	**zimъ́*	"	*žiemų̃*
dat.	**vȍdě*	**zîmě*	"	*žiẽmai*	**vodā́mъ*	**zimā́mъ*	"	*žiemóms*
acc.	**vȍdǫ*	**zîmǫ*	"	*žiẽmą*	**vȍdy*	**zîmy*	"	*žiemàs*
instr.	**vodojǫ̀*	**zimojǫ̀*	"	*žiemà*	**vodā́mi*	**zimā́mi*	"	*žiemomìs*
loc.	**vodě́*	**zimě́*	"	*žiemojè*	**vodā́xъ*	**zimā́xъ*	"	*žiemosè*

The accentual curves are very similar in Slavic and Lithuanian; such differences as exist are due partly to Saussure's Law in Lithuanian (acc. pl. *-às* < acute **-ós* or **-ą́s*) and partly to the aftereffects of Hirt's Law, a BSl. rule (cf. 4.1) that retracted the accent from the ending to the stem vowel in Sl. **-ā́mъ*, **-ā́mi*, **-ā́xъ*, but was analogically reversed in Lith. *-omìs*, *-osè*. There is disagreement in the instr. sg. forms, which are not cognate: Sl. **-ojǫ̀* is genuinely oxytone, while Lith. *žiemà* owes its *-à* to Saussure's Law.

It is a striking fact that mobile paradigms in Slavic, unlike their equivalents in Lithuanian, invariably have a falling (i.e., non-acute) accent in their root-accented forms. The cognates of mobile nouns with an acute first syllable in Lithuanian (class 3) thus belong to AP c in Slavic and have a circumflex in the dat. sg., acc. sg., and other forms:

sg.	nom.	**golvȁ*	cf. Lith.	*galvà*
	gen.	**golvȳ*	"	*galvõs*
	dat.	**gôlvě*	"	*gálvai*
	acc.	**gôlvǫ*	"	*gálvą*
	instr.	**golvojǫ̀*	"	*gálva*
	loc.	**golvě́*	"	*galvojè*
pl.	nom.	**gôlvy*	"	*gálvos*
	etc.			

Similarly PSl. **sȳnъ* (*u*-stem; AP c) 'son' = Lith. *sūnùs*, acc. *sū́nų* (3); **zvȇ̊rь* (*i*-stem; AP c) 'wild animal' = Lith. *žvėrìs*, acc. *žvėrį* (3), and many others.

The descriptive fact that historically acute mobile stems "become circumflex" in Slavic—however exactly this process is understood—is known as **Meillet's Law**. Its interpretation is disputed. Since root-accented forms of the type ***gőlvě*, ***gőlvǫ*, etc., with rising accent, would have been phonotactically well-formed in Slavic (cf. **vőrně*, **vőrnǫ*, etc.), some have attributed Meillet's Law to a kind of "polarization" pressure in mobile paradigms, whereby speakers sought to position the ictus in the root-accented forms as far from the end

of the word—i.e., as close to the beginning—as possible.[36] We will see more of this type of argumentation below. Stang himself regarded the circumflexion as an analogical development based on words where the circumflex was inherited:

nom. **zimȁ* : acc. **zîmǫ* : : nom. **golvȁ* : acc. X; X = **gôlvǫ*,

where the new form replaced "correct" ***gőlvǫ*.[37] But if Meillet's Law had simply been a case of four-part analogy, we would not have expected *all* mobile paradigms in Slavic to eliminate the initial acute, as they did; and we might have expected to find instances of the change running in the other direction, e.g.,

nom. **golvȁ* : acc. **gőlvǫ* : : nom. **zimȁ* : acc. X; X = ***zímǫ*,

as we do not. The exceptionless validity of Meillet's Law points to a phonological, rather than a morphological explanation—a point to which we will return in 2.2.7.[38]

AP c verbs likewise have a falling accent in their root-accented forms. The only such form in Stang's reconstruction of the present indicative paradigm (other forms will be seen below) is the 1 sg.:

sg.	1	**vȇdǫ* 'I lead'	**vêlkǫ* 'I drag'	pl.	1	**vedemъ̀*	**velčemъ̀*
	2	**vedešì*	**velčešì*		2	**vedetè*	**velčetè*
	3	**vedetъ̀*	**velčetъ̀*		3	**vedǫtъ̀*	**velkǫtъ̀*

36 Thus, e.g., "Meillet's law should most probably be interpreted as polarization of accentual mobility in Slavic, due to which accent in the words with mobile accentuation had to be on the first *mora*, instead of on the first syllable (in places in paradigm with initial accent)" (*Wikipedia* s.v. "Meillet's Law," echoing Matasović 2008: 133; accessed Sept. 9, 2016). See further 4.2.3.

37 Stang 1957: 9–10.

38 Hock (2005: 6) gives an overview of older approaches to the problem. One might contemplate arguing that the acute : non-acute opposition was neutralized in unaccented syllables, causing the pre-Slavic ancestor of PSl. **gôlvǫ*, which was phonologically "unaccented," to emerge with the default neutralization product, a circumflex. But the *general* loss of acuteness in unaccented syllables in Slavic was too late for this to be plausible—later, in particular, than Dybo's Law, a rule that was still active in the late eighth century AD (cf. below).

As an enclinomenon, 1 sg. **vȅdǫ* gives up its accent to an accompanying preverb according to Vasil'ev-Dolobko's Law (**zâvedǫ*, **nȅ vedǫ*, etc.). In Lithuanian, there is no mobility as such in finite verbs. But in an interesting echo of the retraction in PSl. 1 sg. **zâ-*, **nȅ vedǫ*, the Lithuanian counterparts of Slavic AP c presents likewise move the accent onto a preverb—not only in the 1 sg., but across the paradigm: *nèvedu* (*nèvelku*), *nèvedi*, *nèveda*, *nèvedame*, etc. The present participles of AP c verbs are mobile both in Slavic (cf. nom. sg. masc. **vȅdy*, **vêlky,* fem. **vedǫtjь*, **velkǫtjь*) and in Lithuanian (nom. *vedą̃s*, *velką̃s* : acc. *vẽdantį*, *velk̃antį*).

2.2.3.3 *Accent Paradigm b*

AP b, with no close equivalent in Lithuanian, is from every point of view the most difficult of the three Slavic accent paradigms. Disyllabic nouns of this type have fixed accent on the final syllable of the stem, which, as in all early IE languages, is more often than not simply the "ending." The forms can be illustrated by the *ā*-stem **ženà* 'woman', to which is added, for reasons that will become clear, the *o*-stem masculine **stolъ̀* 'table':

	sg.		pl.	
nom.	**ženà*	**stolъ̀*	**ženỳ*	**stolì*
gen.	**ženỳ*	**stolà*	**ženъ̀*	**stolъ̀*
dat.	**ženě̀*	**stolù*	**ženā́mъ*	**stolòmъ*
acc.	**ženǫ́*	**stolъ̀*	**ženỳ*	**stolỳ*
instr.	**ženòjǫ*	**stolòmъ*	**ženā́mi*	**stolỳ*
loc.	**ženě̀*	**stolě̀*	**ženā́xъ*	**stolȇ̀xъ*[39]

By a late Proto-Slavic rule just posterior to the stage reflected in the above reconstructions, accented weak yers[40] in non-initial syllables and interior long vowels with a falling accent ("circumflex") gave up their accent to the preceding syllable, yielding a new contrastive accent called the "neoacute." Associated with the neoacute was a new rising tone/intonation, which distinguished it from the older long and short rising accents described in 2.2.1. In conservative BCS dialects the neoacute on long vowels remained separate both from the old acute, which was shortened, and the old circumflex; it is customarily

39 Recall that our preforms reflect a stage of Proto-Slavic when the contrast between accented long vowels with rising and falling intonation was still present in non-initial syllables (2.2.1).

40 A yer (i.e., either of the reduced vowels ъ or ъ) is "weak" and prone to deletion when it is word-final or followed by another vowel that is not itself a weak yer.

denoted with a tilde (/˜/; e.g., 2 pl. pres. *vrãtīte* 'you return' < **võrtīte* < **vortîte*, 1 sg. aor. *zaklẽh* 'I swore' for **zaklę̃sъ* < **zaklęs̀ъ*). On short vowels the neoacute is indicated by a grave (/ˋ/). Neoacute shorts occasionally have distinctive reflexes in the individual Slavic languages, e.g., the special close *o*-vowel (denoted /ѡ/) found in Russian dialects (e.g., 3 pl. pres. *mógut* 'they can' < **mògǫtь* < **mogǫ̂tь*).

The development of the neoacute accent by retraction from a yer or interior circumflex is variously known as Stang's Law or Ivšić's Law; we will here call it **Stang-Ivšić's Law.**[41] Notwithstanding differences of opinion about exactly how the condition on retraction from an interior circumflex should be formulated, the surface facts are reasonably clear. In nouns, the AP b paradigm develops a neoacute whenever the following syllable had an accented yer in Proto-Slavic; we thus find, e.g., *o*-stem nom.-acc. sg. **stòlъ*, giving R dial. *stól* (gen. *stolá*). We also find, in the Old Russian texts investigated by Stang, disproportionately frequent examples of the loc. pl. *dvórěxъ* < **dvorêxъ*, from the AP b noun *dvorъ* (dial. *dvór*) 'court', showing the expected retraction from a circumflex.[42] The most salient examples of retraction from a circumflex, however, are in AP b verbs.

The AP b verbal paradigm is best illustrated by the present of an *i*-verb of this type, e.g., *prosíti* 'to ask':[43]

	Proto-Slavic							post-Stang-Ivšić's Law				
sg.	1	**prošǫ̀*	pl.	1	**prosîmъ*	>	sg.	1	**prošǫ̀*	pl.	1	**pròsimъ*
	2	**prosîši*		2	**prosîte*	>		2	**pròsiši*		2	**pròsite*
	3	**prosîtь*		3	**prosętь*	>		3	**pròsitь*		3	**pròsętь*

There are no cognate forms in Lithuanian, where the reflexes of *i*-verbs (e.g., *prašýti* = **prosíti*) have acquired new presents in **-ā-* (*prašaũ, -aĩ, prãšo*, etc.). But other Slavic present types prominently represented in AP b, such as the full-grade *i̯e*/*o*-presents from non-acute roots (type **pišǫ̀, *pišèši* (> **pĩšeši*),

41 Stang's discussion of the neoacute retraction (1957: 168–70) was anticipated by Ivšić 1911: 163–82.

42 Stang 1957: 71–2. A much-discussed special case is the type represented by R dial. *vólja*, PSl. **vòljā* 'will' < **voljâ* < **volь̀ja*, where loss of the accented yer led first to compensatory lengthening and a falling accent on the following vowel, followed by retraction and a neoacute on the first syllable by Stang-Ivšić's Law. The example is important because it shows both how new long vowels could be produced in final syllables, and how such vowels, if accented, were as just as capable of triggering Stang-Ivšić's Law as circumflex long vowels in medial syllables. See also 5.4.1.2.

43 The purported distinction between AP "b_1" and AP "b_2" in *i*-verbs is discussed in 6.4.2–4.

**pišėtь* (> **pĩšetь*), etc. 'write'),[44] do have cognates in Lithuanian. These, apart from the effects of Saussure's Law (1 sg. *piešiù* 'I draw', 2 sg. *piešì*), are immobile (3 p. *piẽšia*, *nepiẽšia*, pres. ptcp. *piẽšiąs*, *piẽšiantį*), like the Lithuanian counterparts of Slavic AP a.

2.2.4 *Dybo's Law*

BSl. and Slavic accentology, in the years before Stang's book, were marked by the typical Neogrammarian concentration on sound laws and phonological explanations of individual forms or small groups of forms, together with relative indifference to larger questions of patterning and structure. Stang, by shifting the focus from forms to paradigms, precipitated a "paradigm shift" in the larger sense. Where an older generation of scholars had sought to explain an individual AP b form like PSl. nom. sg. **ženà* by invoking a putative Slavic version of Saussure's Law ("Fortunatov's Law") that would have worked before acute endings (e.g., **génā*$_{[+acute]}$ > **ženà*) but not in other forms (e.g., acc. sg. **génān*$_{[-acute]}$), the problem that seemed to require a solution in the wake of Stang's work was the origin of the oxytonicity of AP b as a whole. From this new focus came, less than a decade later, the first and most important breakthrough of the post-Stang period.

Stang's opinion about AP b was that it directly continued the PIE "oxytone" type—a term he understood to include suffix-accented *o*- and *ā*-stems, hysterokinetic consonant stems (e.g., Gk. *patḗr*, gen. *-trós*), and originally proterokinetic *i*- and *u*-stems with generalized accent on the suffix (e.g., Ved. *matíḥ*, gen. *matéḥ*). This idea was problematic in two ways. First, there was no oxytone type in Lithuanian. Stang explained the absence of a Lithuanian oxytone type by supposing that the inherited counterpart of AP b had analogically become mobile in Lithuanian, but the lack of any relic oxytone paradigms made this unlikely.[45] Second, and more important, the PIE "oxytone type" (to continue with Stang's term) was needed for another purpose. According to a widely accepted idea of Saussure (*ibid.*), later elaborated by Pedersen (see 4.2.2), mobility of the classic BSl. type had originated in oxytone consonant stems (e.g., **duktḗ*, acc. **duktérin* 'daughter'), where retraction from interior syllables had produced "bilateral" mobility between a nom. sg. with final accent and an acc. sg. and other strong cases with initial accent (**duktḗ*, acc. **dúkterin*). The

44 Note that the neoacute retraction in AP b *je*/*o*-presents would have been phonologically regular in the 3 pl. (**pišǫ̂tь* > **pĩšǫtь*) and present participle (**pišǫ̂tj-* > **pĩšǫtj-*), but analogical elsewhere. Cf. Stang 1957: 116 f.

45 The disyllabic pronouns *anàs* 'that (one)', *katràs* 'which (of two)', and *kurìs* 'which', which copy the columnar accent of monosyllabic *tàs* 'this/that', *šìs* 'this', and *jìs* 'he', are not serious counterexamples.

bilateral pattern, Saussure and Pedersen had suggested,[46] was analogically extended to all nouns with an accented ending in the nom. sg., whence **galvā́* : **gálvān*, **źeimā́* : **źéimān*, etc. But if the former oxytones had become mobile in this or some other way, they could not also have given AP b in Slavic. Stang drew the necessary conclusion and rejected the Saussure-Pedersen explanation of mobility. For him, mobile *o*-stems and *ā*-stems, as well as mobile thematic verbs of the type **vede*/*o*-, were part of the BSl. inheritance from PIE.

Mobility was to remain a problem, but the question of the origin of AP b turned out to have an inner-Slavic solution. If Stang was right that AP b nouns had "always" been oxytone, the extra-Slavic cognates of AP b should have been expected to be analogically mobile in Lithuanian (classes 3 and/or 4) and oxytone in the other IE languages. The young Soviet scholar V. M. Illič-Svityč set out to see if this was true. The facts were complicated; mobility had spread well beyond its original domain in both Slavic and standard Lithuanian,[47] and exact cognates of BSl. words in Vedic, Greek, or Germanic were not always easy to find. In the end, however, Illič-Svityč (1963) succeeded in showing to the satisfaction of most researchers that the predictions of Stang's theory were *not* confirmed: AP b in Slavic actually corresponded to class 2 in Lithuanian (non-mobile, accented non-acute root) and to root accentuation in the other IE languages. The pattern can be seen, e.g., in PSl. **mьglȁ*, acc. **-ǫ́* (AP b) 'mist' = Lith. *miglà* (4, dial. 2) = Gk. *omíkhlē* 'id.'; PSl. **lěxȁ*, **-ǫ́* (AP b) 'garden bed' = PGmc. **laisō* (< **lóis-*) 'furrow'; PSl. **pěstȁ*, **-ǫ́* (AP b) 'pestle' = Lith. *piestà* 'mortar' (2, 4); PSl. **osȁ*, **-ǫ́* (AP b) 'wasp' = Lith. (Žem.) *vapsà* (2, 4); PSl. **blъxȁ*, **-ǫ́* (AP b) 'flea' = Lith. *blusà* (2); and others. It was notable that AP b nouns in Slavic never had cognates with an acute root syllable in Lithuanian.

Illič-Svityč's discovery meant that two subtypes of initially-accented non-mobile nouns, in complementary distribution, had to be recognized for the common ancestor of Lithuanian and Slavic:

> (1) words like Lith. *várna* (1) : PSl. **vȍrna* (a), with a stable acute accent on the root syllable in both languages; and
>
> (2) words like Lith. *piestà*, acc. *piẽstą* (2) : PSl. **pěstȁ*, acc. **-ǫ́* (b), and Lith. *blusà*, acc. *blùsą* (2) : PSl. **blъxȁ*, **-ǫ́* (b), with a non-acute accent on the root syllable in Lithuanian and second-syllable accent in Slavic.

46 Saussure, to be sure, famously confined his remarks to Lithuanian. See the fuller discussion in 4.2.

47 One of the important innovations of Illič-Svityč was to make extensive use of Lithuanian dialect material, where the spread of mobility had been less extensive.

In the second subtype the accent had evidently been displaced rightwards in Slavic, though not Lithuanian.[48] Illič-Svityč and, more clearly, his colleague V. A. Dybo, saw this movement as a sound change that moved the Proto-BSl. non-acute accent one syllable rightwards in Slavic. The rule in question, though sometimes credited to Illič-Svityč, is more commonly known in English as **Dybo's Law**.[49] Its great significance was to combine AP a and AP b to a single pre-Slavic immobile accent type.

Dybo's Law, a relatively late rule,[50] was the great rightward accent shift of Slavic, producing effects that in the "classical" (i.e., pre-Stang) period of Slavic accentology were typically attributed to a fictitious Balto-Slavic-wide generalization of Saussure's Law ("Saussure-Fortunatov's Law"; cf. above). Like Saussure's Law in Lithuanian, Dybo's Law operated in verbs as well as nouns: the difference between PSl. AP b **prošǫ̀*, **prosîši*, etc. (infin. *prosíti*) and the parallel AP a **stā́vjǫ*, **stā́viši*, etc., (infin. **stā́viti*) 'put' was simply due to the fact that, prior to Dybo's Law, the latter had an acute-accented first syllable, while the former had a non-acute initial accent. But Dybo's Law was quite unlike Saussure's Law in two respects: (1) while Saussure's Law only attracted the accent onto an acute syllable, Dybo's Law drew it onto *any* following syllable; and (2) while Saussure's Law targeted any accented syllable not marked for acuteness, Dybo's Law had no effect on initial accented syllables in mobile (AP c) paradigms. The latter, extremely important difference is seen in the contrast between, on the one hand, PSl. **ženà*, acc. **ženǫ̀* (b), where the accent is on the ending in both forms by Dybo's Law; and, on the other, PSl. **vodà*, acc. **vȍdǫ* (c), where the accent in the "mobile" acc. sg. remains on the root. The explanation for the non-application of Dybo's Law in these cases became a major issue in post-Stang Slavic accentology.

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48 The Lithuanian nom. sg. forms *piestà* and *blusà*, of course, are due to Saussure's Law.

49 See Dybo & Illič-Svityč 1963: 74–77 and the useful discussion by Olander (2009: 140–3, with literature). Long monophthongs that gave up their accent by Dybo's Law, unlike older pretonic longs, retained their inherited length in all Slavic languages with a long : short contrast—a fact that suggests that the rule may have been one of accent spreading rather than a simple shift. Contrast Cz., Slk. *ruka* 'hand' < **rǫ̑kà* < **rǫkà* (AP c; shortened **-ǫ-*) vs. Cz. *louka*, Slk. *lúka* 'meadow' < **lǭkà* (AP b; unshortened **-ǫ-*) < pre-Dybo's Law **lǫ̀ka*. It is disputed, however, whether the apparent pretonic shortening in Cz., Slk. *ruka* was really due to sound change rather than analogy with the regularly shortened circumflex forms (e.g., acc. sg. *ruku* < **rǫ̑kǫ*). See Kapović 2005: 35.

50 The rule must still have been active when the Slavs borrowed the word **kȍrljь* 'king' > **korljȕ* (Dybo's Law) > **kõrljь* (Stang-Ivšić's Law) from OHG *Karl*—presumably in the final third of the eighth century.

2.2.5 *Lexical vs. Left-marginal Accent*

The obvious implication of the fact that the root-accented predecessors of **ženọ́* (b) and **vȍdǫ* (c) were differently susceptible to Dybo's Law is that they were different when the rule applied—in other words, that the initial accent in the pre-shifted, pre-Dybo's Law ancestor of **ženọ́* was phonetically different from the default-assigned initial accent in the enclinomenon **vȍdǫ*. In what follows we will use the term "lexical accent" to refer to the lexically-assigned initial accent of the pre-Dybo's Law forerunner of **ženọ́*, and also to the type of accent that stood on accented vowels in non-initial syllables. The pre-PSl. lexical accent, which was presumably rising, will be marked with the non-committal diacritic /ˈ/ (**žèna*, **žènǫ*).[51] The contrasting *non*-lexical accent on the first syllable of the pre-Dybo's Law ancestor of PSl. **vȍdǫ* will be called the "left-marginal" accent and will be marked with the new symbol /ˋ/: **vòdǫ*, **zìmǫ*, **gòlvǫ*, etc.[52] Dybo's Law, we are now in a position to say, converted pre-PSl. **žèna* and **žènǫ*, which had a lexical accent, to **žená* and **ženọ́*, respectively, but had no effect on pre-PSl. **vòdǫ*, which had a left-marginal accent and eventually surfaced as the enclinomenon **vȍdǫ*.

The terms "lexical" and "left-marginal" accent are not standard, but the existence of a phonetic distinction along these lines is widely, though not always explicitly assumed. Already in 1962, Dybo proposed a teleological scenario to explain how the non-acute ("circumflex," in his usage) initial accent in mobile paradigms came to differ phonetically from the other type of "circumflex" in non-mobile paradigms.[53] Kortlandt (1983: 37) reports the acceptance of such a distinction to be a point of agreement between himself and Garde 1976. Even Olander, who, like Garde, considers the "unaccentedness" of forms like PSl. **vȍdǫ* to be their defining characteristic, concedes that in Proto-Slavic "the unaccented word-forms, which at later stages of Slavic often received initial accentuation, were realized differently from initially accented word-forms" (2009: 128). The distinction thus made between phonetics and phonology is crucial. Since the left-marginal accent was limited to the initial syllables of

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51 The term "lexical accent" replaces the more awkward "*in situ* accent" of Jasanoff 2008 and Jasanoff 2011.

52 The combined grave-macron symbol, which is intended to suggest a tonal fall in word-onset position (see below), is used to avoid confusion with any of the other diacritics used in BSl. accentology. In Jasanoff 2008 and 2011 the left-marginal accent is denoted by a grave.

53 Dybo 1962: 8; see further Hock 2005: 6. In later work Dybo and his collaborators assign phonetic content to the morphological distinction between "dominant" (underlyingly accented) and "recessive" (underlyingly unaccented) morphemes. See ch. 4, note 14.

enclinomena, it was indeed, phonologically speaking, a zero accent: at the pre-Dybo's Law stage of Slavic, a word either had a lexically marked accent (e.g., nom. sg. /žə̀na/, /vodà/, acc. sg. /žə̀nǫ/) or it did not (e.g., acc. sg. /vodǫ/), in which latter case it was assigned a default left-marginal accent by the grammar (/vodǫ/ → **vȍdǫ*). But in acoustic, perceptual terms there is no reason not to think that the left-marginal "zero accent" had phonetic content from the beginning, any more than there is reason to deny phonetic content to its default-assigned descendant, the Slavic falling accent (**vȏdǫ*). The simplest guess is that the left-marginal accent was falling as well.

It is worth a brief digression to consider why, if the left-marginal accent was predictable, we should write the pre-Dybo's Law form as **vȍdǫ*, with a diacritic, rather than as simply **vodǫ*. The reasons are practical and heuristic. First, it is useful to have some way to refer to the initial prominence in **vȍdǫ*/**vȏdǫ*, which surfaces as a palpable accent in all the historical Slavic languages; in Russian, e.g., acc. sg. *vódu* falls together accentually with *pólnyj* 'full' (historical acute) and *prósit* 'asks' (historical neoacute).[54] Second, the two notational choices convey very different historical presumptions. Writing **vodǫ*, with no accent, suggests that the forms which appear as enclinomena in Slavic "lost their accent" or "became unaccented" vis-à-vis their PIE prototypes—which is in fact the way they have been explained historically by Olander (2009).[55] The notation **vȍdǫ*, preferred here, leaves open a wider range of historical options, including the typologically well-documented possibility that the left-marginal accent was produced by retraction from a following syllable in the manner of the later neoacute. Phonology and phonetics both have a role in sound change; neither can be ignored before we know what actually happened.

2.2.6 *The Autonomy of Acuteness in Slavic*

AP a and AP b are in complementary distribution, as are their Lithuanian cognates, accent classes 1 (*várna*) and 2 (*rankà*). The *várna* and *rankà* types in Lithuanian are both underlyingly barytone; the difference between them, apart from the susceptibility of *rankà* to Saussure's Law, is that in *várna* the combination of the accent with the autonomous feature of "acuteness" yielded the Lithuanian falling tone that we call acute, while in *rankà*, with acuteness not present in the root, the accent was realized as the pre-Saussure's Law

54 R *vódu* < PSl. post-Dybo's Law **vȏdǫ* < pre-Dybo's Law **vȍdǫ*; R *pólnyj* < PSl. **pȗlnъjь*; R *prósit* < PSl. post-Stang-Ivšić's Law **pròsitь* < pre-Stang-Ivšić's Law **prosîtь* < pre-Dybo's Law **prȍsitь*.

55 But Olander too finds it useful to use a diacritic for the left-marginal/zero accent, writing **ˌu̯adān* for the equivalent of our **vȍdǫ*.

non-falling tone (still preserved in acc. sg. *rañką*) that we call circumflex. The question now arises whether the relationship of AP a and AP b in Slavic can be analyzed in the same way. AP a has a long rising accent (**vőrna*), while AP b, prior to Dybo's Law, had a "lexical" accent that could stand on both long (**pě̏sta*) and short (**žèna*) nuclei. Was the Slavic rising ("acute") contour at this pre-Dybo's Law stage an unanalyzable, unitary intonation, or was it—as it clearly is, *mutatis mutandis*, in Lithuanian—the result of the interaction of the pre-Dybo's Law lexical accent (/ ˈ/) with an autonomous acuteness feature that could also be associated with unaccented syllables?

The evidence for the latter alternative, i.e., for the original autonomy of acuteness in Slavic as in Baltic, is overwhelming. Direct testimony comes from cases where, as a result of Dybo's Law, the lexical accent moved to a previously unaccented, but non-final, long nucleus. If the target syllable was marked for acuteness before it received the accent, the newly accented vowel emerged with rising (acute) intonation; if it was not marked for acuteness it acquired a falling (circumflex) accent that was subsequently drawn leftward again by Stang-Ivšić's Law. We have already seen a striking example:

	pre-Dybo's Law		post-Dybo's Law		post-Stang-Ivšić's Law
infinitive	**p r ȯ s [i] t i* [+acute]	>	**prosíti*	>	**prosíti*
3 sg. pres.	**p r ȯ s [i] t ь* [-acute]	>	**prosîtь*	>	**pròsitь*

The stem vowel *-i-* was marked for acuteness in the infinitive (cf. Lith *prašýti*, with *-ý-* by Saussure's Law) but not in the present indicative; only after Dybo's Law did the acuteness of the infinitive stem find tonal expression in combination with the accent. Note also the AP b loc. pl. forms **ženā́xъ* and **stolě̊xъ* (> **stòlěxъ*; 2.2.3.3), where Dybo's Law moved the accent onto an acute and non-acute nucleus, respectively.

Accent-independent acuteness also figures in the treatment of final syllables. There are convincing cases where acute and non-acute vowels had different segmental outcomes:

(1) acute vs. non-acute **ō*. The acute treatment is uncontroversially seen in the *o*-stem nom.-acc. du. ending *-a* < PIE **-oh₁* (e.g., OCS *oba* 'both'; cf. Lith. *abù* < **-úo*, Gk. *-ṓ*, etc.). Since Jasanoff 1983 I have maintained that *non*-acute ("circumflex") **ō* was raised to **ū* in final syllables. This is the best explanation, in my view, for PSl. **-y* < **-ū* < **-ō* in the nom. sg. of masculine *n*-stems (e.g., OCS *kamy*, gen. *kamene* 'stone'; cf. Lith. *akmuõ* 'id.'), especially given the parallel raising of non-acute **-ē* to PSl. **-i* in the

nom. sg. of *r*-stems (OCS *dъšti*, Lith. *duktẽ* 'daughter').[56] Raising also took place in the non-acute gen. pl. ending **-ōn* (< **-oHom*; cf. 1.5.1), which developed via **-ūn* to a nasalized yer (**-ǫ̆*). The inherently greater length of the nasalized reduced vowel produced distinctive tonal effects in the individual Slavic languages. See the discussion in 5.3.2.[57]

(2) acute vs. non-acute post-PIE **oi*, **ai*. The normal Slavic outcome of the inherited diphthongs **oi* and **ai* was secondary **ě* ("**ě*$_2$"), which was raised to **i* after soft consonants in final syllables. This treatment is seen in the *o*-stem loc. sg. (PIE **-oi*; cf. OCS *gradě* 'city', *noži* 'knife'), the *o*-stem nom.-acc. nt. du. (PIE **-oih*$_1$; OCS *městě* 'two places', *srьdьci* 'two hearts'), and the *ā*-stem nom.-acc. du. (PIE **-ah*$_2$*ih*$_1$; OCS *glavě*, *duši* 'two souls'), all of which are historically non-acute.[58] In two cases, however, *-i* is found after hard as well as soft consonants, namely, the *o*-stem nom. pl. (PIE **-oi*; OCS *gradi* as well as *noži*), and the 2, 3 sg. impv. (PIE opt. **-oih*$_1$*s*, **-oih*$_1$*t*; OCS *vedi* 'lead!' as well as *piši* 'write!'). Both these endings, as recently pointed out by Gorbachov (2015), were acute in pre-Slavic. In the first case, the originally pronominal nom. pl. in *-i* corresponds to an overtly acute vowel in Lithuanian (cf. nom. pl. *gerì*, *geríeji* < **-ę̄*$_{[+acute]}$); the acuteness of the ending was probably taken from the nominal ending that preceded it, the PIE *o*-stem nom. pl. in **-ōs* (cf. 5.2.2.3). In the case of the thematic imperative/optative, acuteness, probably borrowed from the regular acute of athematic stems, is an observable synchronic fact in the trisyllabic imperative forms, e.g., 2 pl. **vedě́te*, **pišíte*.[59] Reviving and improving upon a suggestion originally due to Jagić (1906: 120 f.), Gorbachov convincingly argues that non-acute-marked **ai* gave **ě*$_2$ in final syllables in Slavic, while acute-marked **ai* gave the vowel Slavicists write as **i*$_2$.

56 So already Pedersen 1905: 325 f. For the non-acuteness of these endings compare PGmc. **-ō* (1.5.1) and 3.2.1 below.

57 The literature on the much-vexed question of the Slavic gen. pl. is surveyed by Olander 2015: 255–7.

58 The acuteness of the *ā*-stem nom.-acc. du. ending in Lithuanian (cf. *abì rankì* 'both hands' < **-ę̄*$_{[+acute]}$) is no doubt an import from the corresponding masculine ending **-ǭ*$_{[+acute]}$ < **-oh*$_1$ (*abù*). The individual endings are discussed in ch. 5.

59 The *-ie-* of the Lithuanian "permissive," on the other hand (e.g., 3 p. *tevediẽ* 'let him/her/them lead'), is conspicuously non-acute; on all these forms see further 6.2.1.2.

2.2.7 *Componential Interpretation of the Slavic Accents*

At this point an interim summary is in order. Pre-Dybo's Law Slavic, like Lithuanian, had an autonomous feature of acuteness that could stand on any long nucleus. In keeping with a convention introduced in Jasanoff 2004, we will henceforth show this feature by underlining. We will thus write **prȯsi̲ti* and **prȯsitь* for the pre-Dybo's Law forms that became PSl. **prosíti* and **prosîtь*, respectively, and **vȯ̲rnā̲* for the pre-Lithuanian ancestor of Lith. *várna*. Nothing is thereby implied or assumed about the actual phonetic value of acuteness, which remains to be discussed.

The Slavic tonal contours were the product of the interaction of acuteness with the independent parameter of pitch accent. On the eve of Dybo's Law, pre-Proto-Slavic had two phonetically contrastive pitch accents—one, high or rising, which we have called the lexical accent, and the other, low or falling, which we have called the left-marginal accent. In the synchronic grammar of pre-Proto-Slavic, the left-marginal accent was assigned by default to initial syllables when the word contained no lexical accent. The combination of lexical accent and acuteness gave a long rising tone:

	pre-Sl. I		**pre-Sl. II**		**Proto-Sl.**	**accented vowel**	**reflexes**[60]
nom.	**vȯ̲rnā̲*	>	**vȯ̲rna*	>	**vőrna* (a)	long rising ("acute")	R *voróna*, BCS *vrȁna*
acc.[61]	**vȯ̲rnān*	>	**vȯ̲rnǫ*	>	**vőrnǫ* (a)	" " "	R *vorónu*, BCS *vrȁnu*

… while the lexical accent on a short nucleus or a long nucleus not marked for acuteness gave an output that was subject to rightward movement by Dybo's Law:

60 Russian and BCS treatments are shown. In Russian the liquid diphthongs **or* and **ol* develop an extra syllable ("pleophony," *polnoglasie*), surfacing as *oró*/*oló* under rising accent and *óro*/*ólo* under falling accent. In BCS the liquid diphthongs undergo metathesis, giving *rȁ*/*lȁ* (< former rising accent) and *râ*/*lâ* (< falling accent). Standard varieties of BCS further undergo the "Neo-Štokavian retraction," by which non-initial accents are retracted by one syllable, yielding new long (/ ´/) and short (/ `/) rising tones. A usefully concise overview of the treatment of the PSl. accent system in the individual Slavic languages is given by Illič-Svityč (1979: 75–77).

61 As above, the acc. sg. is given as the typical site of left-marginal accentuation in AP c nominal paradigms.

nom.	*gènā̲	>	*žèna̲	>	*žená̲ (b)	non-contrastive rising[62]			R *žená*, BCS *žèna*
acc.	*gènān	>	*žènǫ	>	*ženǫ́ (b)	"	"	"	R *ženú*, BCS *žènu*
nom.	*lȁnkā̲	>	*lǫ̀ka̲	>	*lǫkȁ (b)	"	"	"	R *luká*, BCS *lúka*
acc.	*lȁnkān	>	*lǫ̀kǫ	>	*lǫkǫ́ (b)	"	"	"	R *lukú*, BCS *lúku*

In mobile stems the acc. sg. and other non-oxytone forms had a left-marginal accent. When this stood on a short nucleus it remained unchanged (apart from notation):

nom.	*vad̀ā̲	>	*vod̀ā̲	>	*vodȁ (c)	non-contrastive rising	R *vodá*, BCS *vòda*
acc.	*vȁdān	>	*vȍdǫ	>	*vȍdǫ (c)	short falling	R *vódu*, BCS *vȏdu*

On a long nucleus the left-marginal accent yielded a falling contour, but with the further effect that acuteness, if present, was erased. The Slavic counterpart of Lith. *galvà*, acc. *gálvą* (3) thus fell together accentually with the Slavic counterpart of Lith. *žiemà*, acc. *žiẽmą* (4):

nom.	*ga̲lv̀ā̲	>	*go̲lv̀a̲	>	*golvȁ (c)	non-contrastive rising	R *golová*, BCS *gláva*
acc.	*gȁ̲lvān	>	*gȍ̲lvǫ	>	*gǫ̂lvǫ (c)	long falling (“circumflex”)	R *gólovu*, BCS *glâvu*
nom.	*źeim̀ā̲	>	*zim̀a̲	>	*zimȁ (c)	non-contrastive rising	R *zimá*, BCS *zíma*
acc.	*źẽimān	>	*zȉmǫ	>	*zîmǫ (c)	long falling (“circumflex”)	R *zímu*, BCS *zîmu*

This was the phenomenon we know as Meillet’s Law—neither a leveling effect nor the expression of an inchoate drive toward “polarization” (cf. 2.2.3.2), but a simple sound change.

Acuteness was lost more generally than in the Meillet’s Law environment; it eventually disappeared everywhere where there was no lexical accent to “host” it. On the possibility of a single more general rule deleting acuteness, with Meillet’s Law as a special case, see note 38. The merger of acute and non-acute mobile stems would then have to have been later than Dybo’s Law and the final-syllable effects discussed in 2.2.6.[63]

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62 When the landing site was a short vowel or an etymological long vowel that was shortened in final position.

63 *Post*-Dybo’s Law changes that appear to refer to acuteness in unaccented syllables are analogical. Thus, in BCS, *i*-presents of AP a (fixed root accent) have short *-i-* in the infinitive (e.g., *plȁviti* ‘to flood’) and long *-i-* in the present (3 sg. *plȁvī*), a fact ultimately connected with the contrast between acute **-ĭti* and circumflex **-îtь*. But the connection is indirect. *Accented* long vowels with rising intonation were shortened in BCS; short *-i-* was thus regular in the infinitives of AP b and AP c, where the ending had for different reasons come to bear the accent (cf. BCS *pròsiti* < **prosi̋ti* < PSl. **prosíti* (AP b), BCS *lòviti* < **lovi̋ti* < PSl. **lovíti* ‘to hunt’ (AP c)), but not in the infinitives of AP a, where the accent was on the

2.2.8 *Slavic vs. Lithuanian*

Lithuanian has only a single underlying accent. There is thus no outward difference in Lithuanian between forms whose pre-Slavic equivalents have a lexical accent and forms whose pre-Slavic equivalents have a left-marginal accent:

	pre-Lith.		Lith.	[pre-Sl. I		Proto-Sl.]	Lith. stem type
acc.	**vȁ̀rnān*	>	*várną* (1)	[**vȁ̀rnān*	>	**vőrnǫ* (a)]	immobile acute
acc.	**gȁ̀lvān*	>	*gálvą* (3)	[**gȁ̀lvān*	>	**gǫ̑lvǫ* (c)]	mobile acute
acc.	**pȁistān*	>	*piẽstą* (2)	[**pȁistān*	>	**pěstǫ̀* (b)]	immobile non-acute, long
acc.	**źè̋imān*	>	*žiẽmą* (4)	[**źè̋imān*	>	**zîmǫ* (c)]	mobile non-acute, long
acc.	**blȕšān*	>	*blùsą* (2)	[**blȕšān*	>	**blъxǫ̀* (b)]	immobile non-acute, short
acc.	**krȕšān*	>	*krùšą* (4)[64]	[**krȕšān*	>	**krъ̑xǫ* (c)]	mobile non-acute, short

To make up, so to speak, for its lack of two underlying accents, Lithuanian maintained the acute : non-acute distinction with some tenacity: acute mobile *gálvą* remains distinct from non-acute mobile *žiẽmą*.

The common parent of the Slavic and Lithuanian systems must have been essentially the same as the early pre-Slavic system. The descriptive situation in Lithuanian is easily derivable from that of pre-Slavic: all we have to assume is that the lexical accent and the left-marginal accent fell together phonetically, causing **vȁ̀rnān, *pȁistān*, and **blȕšān* to merge accentually with **gȁ̀lvān*, **žè̋imān*, and **krȕšān*, respectively. Morphological mobility would not have been affected by the merger; the columnar accentual curve of words of the *várna*/*piestà*/*blusà* type would have remained distinct from the mobile curve of words like *galvà*/*žiemà*/*krušà*. If, on the other hand, we wanted to derive the pre-Slavic system from that of Lithuanian, it would again have to be via a polarization argument: speakers of pre-Slavic, we would have to say, were so eager to maximize the contrast between the right and left edges of the word in mobile paradigms that they introduced a new phonemic contrast, even on short vowels, to express it. One may wonder whether changes of this sort are actually found in real languages. Other things being equal, it would obviously be better to not to have to assume them.

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root (**plȁ̃vīti* < PSl. **plā́vīti*). The short vowel in AP a was analogically imported from AP b and c (**plȁ̃vīti* → *plȁ̃viti*). There was no shortening in the finite forms (*plȁ̃vī, prõsī, lòvī* < pre-Stang-Ivšić's Law **plā́vitь, *prosîtь, *lovitь*) because the **-ī-* here, not being historically acute, would not have been subject to shortening even when accented.

64 The lexeme is Lith. *krušà* 'hail', R *kroxá* 'crumb'.

The preliminary picture of Proto-BSl. that emerges from Lithuanian and Slavic, with autonomous acuteness and separate lexical and left-marginal accents, is supported by the other Baltic languages, to which we now turn.

2.3 Latvian and Old Prussian

2.3.1 *Latvian*

Latvian is a language in which the accent proper, or stress, has become completely dissociated from tone.[65] All Latvian words have fixed initial stress. Yet intonational contrasts are maintained, not only initially, but also, albeit less robustly, in unaccented syllables. Under the redundant initial accent, conservative Latvian dialects have—or until recently had—three "tones" on long vowels and diphthongs. The self-descriptive "falling" tone (/ ̀/), with prominence on the first mora, corresponds etymologically to the Lithuanian circumflex, both in non-mobile stems, where it reflects a historical lexical accent on a non-acute nucleus (e.g., *rùoka*, acc. *rùoku* (standard orthography *roka*) 'hand' = Lith. *rankà*, *rañką* (2) (< **rȁnk-*); *vìeta*, *-u* 'place' = Lith. *vietà*, *viẽtą* (2) (< **vė̀it-*)); and in mobile stems, where it represents a historical left-marginal accent (e.g., in the acc. sg.) or no accent at all (e.g., in the nom. sg.) on a non-acute nucleus (e.g., *zìema*, *-u* 'winter' = Lith. *žiemà, žiẽmą* (4) (< **źeimą̀, *źė̀imān*); *tàuta*, *-u* 'people' = Lith. *tautà, taũtą* (4) (< **tautą̀, *tȁutān*)). The "sustained" (or "lengthened" or "level") tone (/ ̃/), marked by level or rising pitch (= prominence on the second mora), corresponds in initial syllables to the Lithuanian acute in immobile words (class 1): cf. *vãrna*, *-u* (standard orthography *vārna*) 'crow' = Lith. *várna* (1); *dzẽrve*, *-i* 'crane' = Lith. *gérvė* (1); *brãlis, brãli* 'brother' = Lith. *brólis* (1). Finally, the third or "broken" tone (/ ̂/), with glottal constriction, corresponds in initial syllables to the Lithuanian acute in mobile words (class 3): *gaĵva* 'head' = Lith. *galvà, gálvą* (3); *sirds* 'heart' = Lith. *širdìs, šìrdį* (3); *âzis* 'he-goat' = Lith. *ožỹs*, *óžį* (3).

Without a doubt the most surprising feature of Latvian is the distinction between what appear to be tonal reflexes of two types of acute accent, one proper to historically immobile (Latv. *vãrn-* = Lith. *várn-*) and the other to historically mobile (Latv. *gaĵv-* = Lith. *gálv-*) stems. The classic explanation for this phenomenon, proposed by Endzelīns (1923: 25) and accepted by Stang

65 The summary of Latvian prosodic phonology that follows is indebted to Stang 1967: 140–3, Petit 2010: 55–60, and Derksen 2014: 8–11. Additional descriptive information is provided by Kariņš (1996).

(1966: 140–3), is that the broken tone was originally proper to pretonic acute syllables that received the accent by retraction—typically, the retraction that established initial stress in Latvian. The phonologically regular paradigm, according to these scholars, would have been nom. *galv̂a* (= Lith. *galvà*), gen. *galv̂as* (= Lith. *galvõs*), etc., but acc. **gãlvu* (= Lith. *gálvą*), dat. **gãlvai* (= Lith. *gálvai*), etc., later analogically leveled to *galv̂a*, *galv̂as*, *galv̂u*, *galv̂ai*, etc. This explanation is virtually the same as the one proposed by Stang for Meillet's Law (2.2.3.2), and it is open to the same objection.[66] If the establishment of broken tone had simply been a matter of leveling, we should have expected to find exceptions and cases of leveling in the other direction. In fact, however, the correspondence pattern is completely regular:

Latvian	Lithuanian	Slavic
galv̂a, acc. *galv̂u*	*galvà*, acc. *gálvą*	**golvȁ*, acc. **gôlvǫ*
dzîvs, fem. *dzîva* 'alive'	*gývas*, fem. *gyvà*	**živъ*, fem. **živà*
jaûns, fem. *jaûna* 'young'	*jáunas*, fem. *jaunà*	**jûnъ*, fem. **junà*
zvẽrs, acc. *zvẽri* 'wild animal' etc.	*žvėrìs*, acc. *žvėrį*	**zvě̂rъ*
acute continued by broken tone in originally mobile paradigms	class 3 (acute mobile)	acute continued by circumflex in root-accented mobile forms (Meillet's Law)

It is no accident that the Latvian broken tone and the Slavic circumflex have been identically explained. The two are basically the same phenomenon. In Slavic, the surface acute (= long rising) accent is the realization of the lexical accent on an acute-marked nucleus, while an underlying left-marginal accent on an acute-marked nucleus gives a surface circumflex. In Latvian too, the lexical and left-marginal accents have distinct reflexes on acute vowels. The sustained tone, as the reflex of a lexical accent on a [+acute] nucleus, is the precise analogue of the Slavic acute. But Latvian, unlike Slavic, did not simply delete acuteness when it was coupled with a left-marginal accent. Instead, acuteness under the left-marginal accent—and, indeed, *everywhere* where it did not specfically bear a lexical accent (see below)—was "spelled out" as glottal constriction. There was never a stage in Latvian where a nom. sg. with broken tone (*galv̂a*) co-occurred in the same paradigm with an acc. sg. with sustained tone

66 See the critical discussion by Olander (2009: 118–21).

(**gãlvu*). The history of these forms can rather be envisaged as follows (forms of *vãrna* are provided for comparison):

		nom. sg.	acc. sg.	[nom. sg.	acc. sg.]
1.	Proto-BSl. preforms	**ga<u>l</u>vā́*	**gà<u>l</u>vān*	[**vȁ<u>r</u>nā*	**vȁ<u>r</u>nān*]
2.	<u>V</u> > V̂ under lexical accent; <u>V</u> > V̂ elsewhere	**galv̂ā́*	**gàlv̂ān*	[**vā́rnâ*	**vā́rnān*]
3.	shortening and loss of tone in endings	**galv̂à*	**gàlv̂u*	[*vā́rna*	**vā́rnu*]
4.	fixation of uniform initial accent	*ˈgalv̂a*	*ˈgalv̂u*	[*ˈvãrna*	*ˈvãrnu*]

Latvian also preserves tonal distinctions in unaccented (=non-initial) syllables. There seem to be no dialects, however, that still retain all three tones non-initially, and there is a strong tendency for particular morphemes to become "fixed" with particular tones.[67] In principle, however, any acute-marked nucleus that originally bore a lexical accent, whatever its position in the word, acquired sustained tone in Latvian, and any acute that did not bear a lexical accent, wherever it stood in the word, acquired broken tone.[68] A form frequently discussed in this connection is the loc. pl. *galv̂âs*, where the two broken tones point to an oxytone preform **ga<u>l</u>vā<u>s</u>u̇*, exactly comparable to Lith. *galvosè*.[69] Broken tone was morphologically generalized in the infinitives of derived verbs in *-ât*, *-êt*, *-ît*, but not, interestingly, in the corresponding presents and/or preterites, which consistently have sustained tone (*-ãju*, *-ẽju*, *-ĩju*). The infinitives with broken tone were phonologically regular when the root was originally accented; *-ãju*, *-ẽju*, etc. were regular when the accent was on the suffix.

2.3.2 *Old Prussian*

The poor state of preservation of Old Prussian keeps it from playing a major part in accentological discussions. Yet it is not entirely uninformative.[70] In the *Enchiridion*, the distinction between acute and circumflex contours is optionally (but frequently) marked in accented diphthongs, including liquid and

67 See Derksen 2014: 10.

68 The left-marginal accent and accentlessness thus pattern together in Latvian, a fact cited by Young (1994: 106), building on Garde 1976: 1, 195–6, to argue that at an earlier stage of Latvian the left-marginal accent was a zero accent, as in Slavic.

69 Stang (1966: 142–3) and Derksen (1991: 52) note that under Endzelīns' retraction-based theory of the broken tone the accent would have to have been retracted twice in this word—once onto the stem vowel and once onto the root.

70 The short account that follows is geared to the particular issues that will concern us in later chapters. Petit (2010: 75–100) presents a more extensive review of the evidence for the Old Prussian prosodic system. See also Rinkevičius 2009.

nasal diphthongs and diphthongized long monophthongs, by the placement of a macron on the first or second element.[71] Stang (1966: 144) gives, *inter alia*, the following examples:

acute	circumflex
inf. *pogaūt* 'to catch' : Lith. *pagáuti*	3 p. *ēit* 'goes' : Lith. *eĩti*
inf. *boūt* 'to be' : Lith. *bū́ti*	acc. sg. *rānkan* 'hand' : Lith. *rañką*
acc. pl. *geīwans* 'alive' : Lith. *gývus*	inf. *īmt* 'to take' : Lith. *imti*
acc. sg. *aīnan* 'one' : Lith. *víeną*	nom. *piēnkts* 'fifth' : Lith. *peñktas*
nom. *soūns* 'son' : Lith. *sūnùs*, *sū́nų*	acc. pl. *āusins* 'ears' : Lith. acc. sg. *aũsį*

The position of the macron suggests that the acute was rising, as in Slavic and Latvian (sustained tone), and that the circumflex was falling, as in Latvian (falling tone) and Žemaitian. The macron on a long monophthong conveys no information other than that the vowel was accented.

Old Prussian inherited mobility of the familiar BSl. type, as in acc. sg. *mērgan* 'virgin', dat. pl. *mergūmans* (< **-ā́m-*), and *spigsnā* 'bath', acc. *spīgsnan*. A curiosity is the frequently occurring word *deiws* 'God', which is attested over a hundred times in a variety of case forms (nom. *deiws*, gen. *deiwas*, acc. *deiwan*, voc. *deiwe*, *-a*, acc. pl. *deiwans*), but never with a macron. Since the word is historically mobile (cf. Lith. *diẽvas* (4)), it has been suggested that the spelling *deiw-* represents the distinctive Old Prussian reflex of Proto-BSl. **dèiv-*, with the left-marginal accent that would have been expected in the gen. sg., voc. sg., acc. sg., and acc. pl. of a mobile *o*-stem.[72] If so, the eight occurrences of macron-less acc. sg. *deinan* 'day' (: Lith. *dienà* (4)) and a few other forms could be explained in the same way. But the left-marginal accent is unambiguously written with a circumflex in acc. sg. *mērgan*, as well as in other forms where mobility can be inferred from Lithuanian, e.g., acc. pl. *āusins* (cf. Lith. *ausìs* (4)) and gen. sg. *ālgas* 'price' (cf. Lith. *algà* (4)). It may simply be that Abel Will, the non-native speaker of Prussian who produced the written text of the *Enchiridion*, omitted the macron in the common word for 'God' because he knew its pronunciation and/or assumed others would know it.[73]

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71 Owing to the typographical impossibility of placing a macron on an *r*, *l*, *m*, or *n*, the acute liquid and nasal diphthongs go unmarked.

72 This is the position of Olander (2009: 125 f.), who takes the absence of a diacritic in these forms to signal their literal accentlessness. Stang (1966: 173) raises the possibility of a "middle tone."

73 A partial parallel might be the non-writing of the vowels in the divine name in the Hebrew Bible, although here the motive was piety rather than economy.

Old Prussian is the only Baltic language to show a distinction between mobile and immobile paradigms in finite verbs. Stang (1966: 451–55), building on the well-grounded view that single consonants after accented short vowels tend to be written double (Trautmann 1910: 196 f.), identifies two accentual types:

> (1) with apparent accent on the predesinential syllable and gemination of the 1 pl. ending (e.g., 1 pl. *perweckammai* 'we scorn', *klantemmai* 'we curse', *paikemmai* 'we deceive', *wertemmai* 'we swear'); and
>
> (2) with apparent accent on the root, frequent gemination of the root-final consonant, and non-gemination of the 1 pl. ending (e.g., 3 p. *imma*, 1 pl. *immimai* 'take'; 3 p. *etwerpe*, 1 pl. *etwērpimai* 'forgive'; 1 pl. *gunnimai* 'we drive'; 3 p. *posinna*, 1 pl. *posinnimai* 'confess'; 3 p. *turri*, 1 pl. *turrimai* 'have').[74]

Type 1 corresponds morphologically to the PIE simple thematic type in **-e/o-* (PSl. **-e/o-*, Lith. *-a-*), which is overwhelmingly mobile in Slavic (AP c: **vȅdǫ*, **vedešì*, etc.) and was formerly so in Lithuanian (3 p. *vẽda*, *nèveda*, ptcp. *vedą̃s*; cf. 2.2.3.2). Type 2 corresponds to a variety of present types and individual forms that are wholly or partly immobile in Slavic (e.g., **jьmǫ́*, **jьmeši* < **jьmė̀ši*, etc. (AP b)) and/or were originally immobile in Lithuanian (3 p. *žìno*, *nežìno*, ptcp. *žìnąs*; *tùri*, *netùri*, ptcp. *tùrįs*; cf. 2.2.3.3). The two types thus fairly clearly represent historical mobility and immobility, respectively.[75]

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74 As Olander (2009: 122–3) and Petit (2010: 77–9) argue, the primary function of orthographic doubling in Old Prussian is not to mark the place of the accent, but to indicate that the preceding vowel is short. But there is a correlation of doubling with the accent as well, and Stang's accentual interpretation of the difference between types 1 and 2 is independently supported by facts such as the *-ē-* of *etwērpimai* and the raising of unstressed **-a-* to *-i-* in *immimai*. While I have no independent explanation for the apparent final accent of *semmē* (= Lith. *žẽmė*) 'land', *weddē-din* (cf. Lith. *vẽdė*) 'brought her', and similar forms, I cannot accept Kortlandt's view (1974) that gemination denotes a *following* accent.

75 Other type 2 formations include the nasal presents (e.g., *polīnka* 'remains', *senrīnka* 'collects'), which are systematically immobile in both Lithuanian and Slavic, and the *į̄e/o-* presents (e.g., *etwerpe*, *gēide* 'waits' (= Lith. *geĩdžia*, *negeĩdžia* 'desire'), *kūnti* 'watches over'), which are immobile in Lithuanian and Slavic when the root is heavy (details in 6.2.2.3). The simple thematic present OPr. *līse* 'crawls' (type 2) is exactly cognate with PSl. **lězǫ* 'climb' (AP a); both, interestingly, are irregularly immobile.

An actual mobile paradigm seems to be preserved in the Old Prussian reflex of the PIE thematic present **g^{u}íh$_3$u̯e/o-* 'live', which clearly belongs to AP c in Slavic (**žîvǫ*, **živešĭ*, etc.).[76] The key forms are, on the one hand, 1 pl. *gīwammai*, *-emmai*, with accent on the thematic vowel (presumably retracted from the ending), and, on the other, the hapax 2 sg. *gīwu* < **gī́wai*, with root accent and the regular change of **-ai* to *-u* after a labial (cf. 1 sg. *asmu* beside *asmai* 'I am').[77] There is also an accentually ambiguous 3 p. *gīwa*, *gīwe*, probably standing for *gīwa*. The 2 sg. forms *gīwasi* (1×) and *gīwassi* (2×) are unclear; they can be explained as renewals or errors for 2 sg. *gīwu*, but have also been taken to be futures or sigmatic modal forms.[78] Stang, who believed that PIE thematic presents were accented on the root in the singular and on the endings in the plural, interpreted the difference between root-accented *gīwasi* and *gīwu* (which he took to be an error) and thematic vowel-accented *gīwammai*, *-emmai* (with retraction, as he supposed, from the ending) as lending support to his views. But if *gīwu* is really the only "correct" form of the 2 sg. present indicative, the only clear point that emerges from the conjugation of OPr. *gīw̆a-* is that disyllabic *gīwu* and probably *gīwa*, *-e* were accented on the root, and trisyllabic *gīwammai*, *-emmai* was accented on the thematic vowel. This is very close to the pattern of mobile verbs in Slavic—a point to which we will return later.

2.4 Conclusion: Proto-Balto-Slavic

2.4.1 *Accent*

Proto-BSl. prosodic phonology, as we have seen, was characterized by the interplay of three independent features, vowel length, accent proper and acuteness. Length was unproblematic at this stage. There were two phonetic accents, which were associated with different pitch contours. The "lexical" accent could stand on any vowel or diphthong, long or short, in any syllable. Like the PIE accent, of which it was basically the unshifted continuant, it was probably marked by a rise in pitch. Contrasting with this was the "left-marginal" accent, which could likewise occur on any type of nucleus, long or short, but only in initial syllables and only (so far as we have seen) in mobile paradigms. The

76 Lithuanian has no corresponding present. Old Latvian does have a present *dzīvu*, etc., but its accent type has not been recorded. A broken tone would be expected.

77 On *gīwu* and its relationship to the normal East Baltic 2 sg. in **-ai* or **-ei* see Cowgill 2006: 561 ff.

78 So cautiously Cowgill *ibid.* and Smoczyński 1998 and 2004: 337–9.

phonetic properties of the left-marginal accent have to be inferred from its reflexes in the daughter languages, particularly its reflexes on non-acute vowels, where the potentially complicating factor of acuteness was absent. Here we find a falling tone in South Slavic (BCS *vòdu*, *zîmu*), Latvian (*zìemu*), and probably Old Prussian (*mērgan*); in the latter two languages, but not Slavic, falling tone is also the reflex of the lexical accent on non-acute nuclei (Latv. *rùoku*, OPr. *rānkan*).[79] In Lithuanian, where the lexical and left-marginal accents merge in all positions, the product of the merger is non-falling/rising in the standard language (*žiẽmą*) but falling in Žemaitian. The obvious unmarked assumption, if the lexical accent was high or rising, is that the left-marginal accent was low or falling. The BSl. accent system was not mora-based; the difference in contour between the two accents was realized even on monomoraic vowels.

All non-clitic word-forms had to be realized with a surface accent in Proto-Balto-Slavic. If no lexical accent was present, a default left-marginal accent was assigned at the left edge of the word. Being automatic, the left-marginal accent was not underlyingly marked, and words that received this type of accent were to that extent phonologically accentless. But it does not follow that left-marginally accented forms at the BSl. level were "unaccented" in the specific way that enclinomena display their unaccentedness in Slavic. Enclinomena in Proto-Slavic conformed to Vasil'ev-Dolobko's Law, the synchronic rule by which, as discussed in 2.2.2, forms with an initial accent in mobile paradigms (= in our terms, left-marginal accent) surrendered their accent to the nearest available enclitic or proclitic host (**zîmǫ*, **nâ zimǫ*, **na zimǫ žė*, etc.). This behavior was not an inevitable consequence of underlying accentlessness. Hundreds of well-known languages—including, e.g., French and Hungarian—lack a lexically specified accent, but have no rule like Vasil'ev-Dolobko's Law. Among older IE languages, Greek has both phonologically accented words with a lexically assigned accent and vast numbers of words with recessive accent, which was assigned by default to words unspecified for accent in the lexicon. Yet finite verbs in Greek, which have recessive accent, show no proclivity to donate their accent to a neighboring clitic. Whether Proto-BSl. specifically had Vasil'ev-Dolobko's Law—i.e., whether speakers of the language we reconstruct on the basis of Baltic and Slavic not only said **źėimān* (= PSl. **zîmǫ*), but

79 BCS *rûku* has a falling tone as well, but this is because the word for 'hand' has secondarily become mobile in Slavic, possibly under the influence of the word for 'foot' (so Kortlandt 1977: 327). The true Slavic reflex of the lexical accent on a non-acute nucleus is seen in PSl. **lǫkȍ*, shifted from **lȍkǫ* by Dybo's Law. For the treatment of the lexical accent in non-acute intonable monosyllables see 5.5.1 (end) and 6.6.3, note 102.

also, in effect, **nȏ źeimān* (= **nâ zimǫ*) and **nō źeimān gė̀* (= **na zimǫ žė̀*)—is an empirical question, to be decided by inspecting the comparative evidence, above all from Lithuanian.

Lithuanian does not have, and seems never to have had, full-blown enclinomena in the Slavic sense. Formerly mobile verbs, as seen earlier, transfer their accent to a preverbal particle in Lithuanian (*nèveda*; also *ìšveda, ùžveda, nùveda*, etc.); this shift, which was no doubt originally proper only to the left-marginally accented forms of the paradigm, has an exact counterpart in Slavic (**jь̏zvedǫ, *prîvedǫ, *dȏvedǫ*, etc.). But no generalizations can be drawn from the accentual behavior of preverbs. Preverb + verb sequences are subject to univerbation in every IE language, including Hittite, and the resulting word forms are subject to language-particular rules. Accentuation of the preverb is the norm in Vedic Sanskrit; the verbal root is accented in Germanic; the second element in the verbal complex, whether a preverb or the root itself, is accented in Old Irish. The most striking and persistent manifestation of Vasil'ev-Dolobko's Law in Slavic, the transfer of the accent from noun to preposition in prepositional phrases, is conspicuously absent in Lithuanian, which lacks even fossilized phrases of the type R *ná goru* 'uphill' or *zá gorodom* 'in the country'. What Lithuanian does have is the comparable phenomenon in petrified *postpositional* phrases. The effect can be seen in the so-called secondary cases—the illative, allative, and adessive, inner-East Baltic local cases made by adding postpositions to existing case forms. In the illative, the only one of the three secondary cases to survive as a living form in modern Lithuanian, the postposition *-n*(*a*) is added to the accusative. The result in accent classes 1 and 2, where the underlying acc. sg. and pl. have initial lexical accent (*várną, rañką*, pl. *várnas, rankàs*), is retention of the accent on the root: *várnon, rañkon* < **'-ān-na*, pl. *várnosna, rañkosna*[80] < **'-ās̲-na*. But in classes 3 and 4, where the accusative forms have left-marginal accent (*gálvą* < **gàlvān*, etc.), the accent migrates to the postposition (*galvoñ, žiemoñ* < **-ān-nȁ*, pl. *galvósna, žiemósna* < **-ās-nȁ*).[81] The same thing happens, *mutatis mutandis*, in the dialectal and Old Lithuanian forms of the allative, which adds *-p*(*i*) to the genitive (e.g., OLith. *skaitýtojop* (1) 'to the reader', *Dievóp* (4) 'to God'). The adessive, which adds *-p*(*i*) to the locative (e.g., OLith. *kitámp* 'at another', *tavimp* 'in you, chez toi'), offers less clear further examples.[82]

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80 For **rankósna*, with analogical suppression of Saussure's Law.

81 For **galvosnȁ, *žiemosnȁ*, with retraction by the synchronic counterpart of Hirt's Law (see 2.2.3.2 above and 4.1).

82 So similarly, within the context of his own theory, Olander 2009: 103–4. On the secondary cases as a whole see Senn 1966: 92–5 and Stang 1966: 228–32, 290–2. It is notable that

Another case of the same phenomenon—rightward movement of the accent from a left-marginally accented form to an enclitic—is probably to be seen in the old and dialectal shift of the accent from the stem to the postposed reflexive particle *-s*(*i*) in certain verbal forms, e.g., *sėdasì* 'sits down', *stojasì* 'stands up', OLith. (Daukša) pret. *kełés* 'arose' for standard Lith. *sėdas*, *stójas*, *kẽlės*. The facts are discussed in some detail by Stang (1966: 478–80), who weighs the possibility that the shift was originally associated with mobility. If so, the movement of the accent to the reflexive would exactly correspond to R *náčal* 'began (tr.)' vs. *načalsjá* 'began (intr.)'.

A prudent interim answer, then, to the question of whether Vasil'ev-Dolobko's Law was a rule of Proto-BSl. would be that speakers of Proto-Balto-Slavic probably did *not* say **nõ̀ źeimān* (= **nâ zimǫ*), but very possibly did say **(nō) źeimān gė̀* (= **(na) zimǫ žė̀*). The term "enclinomenon" at the BSl. level is an anachronism.

2.4.2 *Acuteness*

Neogrammarian and pre-Stang "classical" accentology confused the autonomous feature of acuteness with the tonal characteristics of the "acute" accent in Baltic, Slavic, and Greek and the durational characteristics of "acute" final syllables in Germanic (1.5.1), thus helping to produce the desperate disorder of older handbook presentations like Shevelov 1964: 38–80.[83] The emergence of the modern view—that Proto-Balto-Slavic basically had two kinds of long vowels that differed in some non-intonational feature—did not immediately bring any consensus over what the phonetic nature of acuteness might be. Stang (1966: 137) was agnostic on this point, allowing for the possibility of glottalization, relatively greater duration, or secondary stress in unaccented syllables. Illič-Svityč, in his important 1963 book, systematically characterized the first syllable of words like *galvà*/*galv̂a*/**gőlva* as "long" and the first syllable of words like *piestà*/*pìesta*/**pěstȁ* as "short." The view that acuteness consisted in a unit of extra length is defensible for non-final syllables, since, as will be seen in 3.2.2, pre-BSl. **g$^{(h)}$olH$_{\underline{u}}$-* (if this is the correct reconstruction) did pass through a stage **gōlu̯-* on the way to becoming acute-marked

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neither *-n*(*a*) nor *-p*(*i*), even when the vowel is retained, ever surfaces with an actual accent. The reasons are no doubt partly phonological (Hirt's Law, retraction in apocope-prone forms) and partly morphological. The unetymological acute in the dialectal allatives *Dievópi* 'to God' and *namópi* 'home(wards)' (Senn 1966: 92) suggests analogical copying of Hirt's Law (*Dievo=pì* → *Dievópi*, on the model of ill. pl. *žiemos=nà* > *žiemósna*).

83 Together with the overreaction by Kuryłowicz (1958: 163 ff. and earlier), who denied autonomous acuteness altogether.

**galv-*. But final syllables make a purely quantitative interpretation of acuteness highly unlikely. In final syllables it is the *non*-acute vowels which, to judge from Lithuanian and the cognate endings in Germanic, were longer than the acute ones (cf., e.g., Lith. 1 sg. *vedù* < **-úo* (acute), Go. *-a* < **-ō* (bimoric) vs. Lith. *n*-stem nom. sg. *akmuõ* (non-acute), Go. *-o* < **-ō̃* (trimoric)). For this and other reasons, a growing number of scholars now favor glottal constriction, i.e., a *stød*-like interruption of normal voicing, as the main phonetic correlate of acuteness. The idea that acuteness was glottalization, which originated with Vaillant 1936, owes much of its modern currency to Kortlandt, for whom it early became a centerpiece of his larger system linking acuteness to laryngeals and glottalic consonants (see 3.3). The strongest argument for glottalization, however, has nothing to do with any particular vision of IE phonology or BSl. accentology as a whole. It is the simple comparative fact that glottalization is a directly observable concomitant of acuteness in the Žemaitian broken tone, where it surfaces under the accent, and in the Latvian broken tone, where it surfaces in the *absence* of the lexical accent. *Stød* is apparently an areal feature of the Baltic region, occurring not only in the two East Baltic languages proper, but also in the Baltic Finnic language Livonian and (in two distinct guises) Danish.[84]

The interaction of the lexical and left-marginal accents with the independent variable of glottalization was the engine that generated the observed rising, falling, broken, etc. tones of the daughter languages. It would be needlessly speculative to attempt a phonetic discussion of the individual accent + glottalization combinations in each language at every prehistoric stage. But the link between glottalization and tonal contour is well documented in languages of the world,[85] and the general mechanism for the conversion of voice quality to tone and vice versa is easy to understand. If the lexical accent was realized on non-acute vowels as a medium-high peak preceded by a mild rise and followed by a mild fall, as in

84 On the Danish *stød* and the distinct West Jutland (*vestjysk*) *stød*, see Basbøll 2005: 82–7 and Ringgaard 1960, respectively. The Livonian *stød* is described by Kiparsky 2006.

85 Vietnamese and its relatives, in particular, are famous for tone systems in which contour and phonation type, including a register of glottalization/creaky voice, interact in complex ways; see Ferlus 1998. Closer to home, the Danish *stød* is the etymological counterpart of "accent 1" in Swedish and Norwegian, from which it developed by a kind of compression (cf. 3.2.1, note 9).

then the insertion of an interval of *stød*/creaky voice into the contour could have led to the misperception of a purely rising tone:

or even, depending on variables of timing, adjacent consonant voicing, etc., a falling tone:

Such misperceptions, phonologized, were the basis of the historical intonations.

2.4.3 *Summary*

Below are listed, for convenience, the basic combinations of accent and acuteness and their initial-syllable treatments in the three principal languages:

description	Proto-BSl.	Lith.	Latvian	Proto-Slavic
acute long nucleus lexical accent	**vȧ̱rnān*	*várną* acute	*vārnu* sustained tone	**vőrnǫ* long rising (“acute”)
non-acute long nucleus lexical accent	**pȧistān*	*piẽstą* circumflex	*pìestu* falling tone	**pe̋stǫ* > **pěstǫ̀* AP b (w. Dybo’s Law)
short nucleus lexical accent	**blȕšān*	*blùsą* (simple accent)	*blusu* (simple accent)	**blt̏xǫ* > **blъxǫ̀* AP b (w. Dybo’s Law)
acute long nucleus left-marginal accent	**gȧ̱lvān*	*gálvą* acute	*galv̂u* broken tone	**gôlvǫ* long falling (“c’flex”)

non-acute long nucleus	**źẽimān*	*žiẽmą*	*zìemu*	**zîmǫ*
left-marginal accent		circumflex	falling tone	long falling (c'flex)
short nucleus	**krȕšān*	*krùšą*	*krušu*	**krȏxǫ*
left-marginal accent		(simple accent)	(simple accent)	short falling

The first three lines are associated with barytone immobility (nom. sg. **vȧ̲rn̲ā̲*, **pȧistā̲*, **blu̇šā̲*), the second three with bilateral mobility (nom. sg. **ga̲lv̲ā̲́*, **źeimā̲́*, **krušā̲́*).

All this is a far cry from the late PIE system, where there was no acuteness feature, no mobility in *ā*- and *o*-stems (and little or none in *i*- and *u*-stems), and no mobility-linked distinction between separate lexical and left-marginal accent types. Explaining the rise of these features of Balto-Slavic will be our goal in the chapters that follow.

CHAPTER 3

The Origin of Acuteness

The major accent-related innovations of Proto-BSl. vis-à-vis PIE were the introduction of the originally autonomous (i.e., accent-independent) feature of acuteness, and the creation and spread of bilateral mobility and its associated left-marginal accent. This chapter is devoted to the first and more tractable of these, acuteness. In view of the bulky and disputatious literature that has grown up around this topic, one might get the impression that the differences among the contending parties were very great. As we shall see in what follows, this is only partly correct.

3.1 The Scope of the Problem

Acuteness has been impressionistically associated with "long vowels" since the pre-laryngeal period. This is because accented historical long monophthongs in the root syllables of basic vocabulary items are usually acute in Lithuanian and (except when undone by Meillet's Law) Slavic. Typical cases are Lith. *bū́ti* 'to be': PSl. **bȳ́ti* 'id.', Lith. *móteris* 'woman' : PSl. **mā́ti* 'mother', Lith. *dúoti* (< **dǫ́-*) 'to give' : PSl. **dā́ti* 'id.', and Lith. nom. sg. fem. *gyvà*, acc. *gývą* 'alive' : PSl. **živà*, acc. **žîvǫ* (for **žívǫ* by Meillet's Law). The informal correlation of length with acuteness fails, however, in final syllables, where Lithuanian has both acute and "circumflex" long-vowel endings, e.g., nom. sg. *rankà* < **rankā́* < **rànkā̃* (Saussure's Law) vs. acc. *rañką* < **-ān* and the other examples in 2.1.2. Nor is it obvious at first glance how vowel quantity relates to the history of diphthongal near-minimal pairs of the type Lith. *gérti* 'to drink' vs. *beřti* 'to strew', or PSl. **tȇrti* 'to rub' vs. **dertì* < **dȅrti* (Dybo's Law) 'to tear'.

The problem predictably takes on a different aspect when recast in laryngeal terms. Under the laryngeal theory, the long monophthongs of Neogrammarian phonology resolve into three distinct IE categories, only one of which is actually long:

(1) long vowels by post-IE tautosyllabic laryngeal lengthening (e.g., **b^{h}ū-* < **b^{h}uH-*, etc.), the commonest type;

(2) long vowels by post-IE contraction across a laryngeal hiatus (e.g., *ā*-stem nom. pl. **-ās* < **-eh$_2$es*); and

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(3) inherent long vowels, which in turn fall into three subtypes: a) apophonic long vowels, as in Narten ablaut (1.1.2) and *vr̥ddhi* derivation (1.6.2); b) long vowels by word-final compensatory lengthening before a lost **-s* or **-H* (Szemerenyi's Law, e.g., nom. sg. **-tḗr* < ***-tér-s*); and c) long vowels by inner-IE contraction at morpheme boundaries (e.g., *o*-stem nom. pl. **-ōs* < **-o-es*).

To these three major types Balto-Slavic adds a fourth. As first noticed by Winter (1978), PIE short vowels normally appear as long in Balto-Slavic before an etymological voiced stop. Uncontroversial examples include Lith. *núogas*, OCS *nagъ* 'naked' beside Ved. *nagná-*, Go. *naqaþs*; Lith. *sėdėti*, OCS *sěděti* 'to sit' beside Lat. *sedēre*, Go. *sitan*; and Latv. *âbele*, PSl. **ábl̥ko* 'apple' beside OE *æppel*. There is no comparable lengthening before an etymological voiced aspirate, even though the two series otherwise fall together; contrast Lith. *nagà* 'hoof', OCS *noga* 'foot', Gk. *ónuks*, *ónukh-* 'nail, claw' (< **h₃nogʷʰ-*); OCS *ležati* 'to lie', Go. *ligan* (< **legʰ-*); Lith. *debesìs* (for **neb-*), OCS *nebo* 'sky', Ved. *nábhas-* 'moisture, cloud' (< **nebʰ-*). The BSl. lengthening of short vowels before voiced stops is known as **Winter's Law**. Despite high-profile exceptions that have yet to be satisfactorily explained, notably including PSl. **vodà* 'water' (< *u̯od-*) for expected **vadà*, the essential correctness of the rule can hardly be doubted.[1]

There is no disagreement about how most of these categories align with acuteness. Long vowels of type (1) (i.e., sequences of short vowel plus tautosyllabic laryngeal) uncontroversially have acute reflexes; here belong, e.g., *bū́ti* : **bʏ́ti* < **bʰuH-t(e)i*[2] and the *ā*-stem nom. sg. **-a̍́* < **-eh₂* (Lith. *rankà*). Winter's Law was another source of acutes: in the examples above, Lith. *núogas* (= Latv. *nuôgs*) and PSl. *nâgъ* (AP c) go back to BSl. **nō̆gas*, with Slavic loss of acuteness by Meillet's Law; Lith. *sėdėti*, 3 p. *sėdi* and PSl. *sědě́ti*, 1 sg. **sě̍djǫ* (AP c) point to BSl. **sēd-*, **sē̆d-*; and Latv. *âb-* and PSl. **áb-* point to BSl. **āb-*, albeit with left-marginal accent in Latvian (giving broken tone) and lexical accent in Slavic. Tautosyllabic **-VRH-* sequences gave acutes as well (e.g., Lith. *gérti* < **gėrt(e)i* < **gʷerh₃-*; PSl. **tḗrti* < **tėrt(e)i* < **terhₓ-*). Sequences of the type **-VHV-*, on the

1 *Pace* Patri 2005. Kortlandt interprets Winter's Law as a transfer of glottalization from a glottalic stop to the preceding vowel; see note 18 below. None of the numerous attempts to limit the application of the rule to particular segmental or prosodic environments (e.g., Rasmussen 1992, Matasović 1994, Shintani 2009, Kortlandt 2011a) has met with general acceptance.

2 As a matter of convenience, I write the BSl. infinitive ending as **-t(e)i* in this section. In reality there is evidence for multiple variants of this suffix, the clearest being **-tēi* (cf. PSl. **-ti*, Latv. *-tiê-s*) and simple **-ti* (Lith. *-ti*).

other hand (i.e., long vowels of type (2)), have *non*-acute contraction products (e.g., Lith. gen. sg., nom. pl. *rañkos* < **-ās* < **-eh₂es*).

Given this degree of consensus, it would be natural to expect agreement on the *mechanism* of "acute formation"—the process by which length and/or the presence of a laryngeal translated into phonetic acuteness. But this is not the case. Two quite different theories of acuteness vie for acceptance in the current literature. One, which may be called the traditional or "quantitative" theory, makes length, often but not invariably laryngeal-induced, the immediate source of acuteness, however acuteness is understood phonetically. The second, or "glottalic contact" theory attributes acuteness to the direct proximity of a glottalic consonant, either a laryngeal or a purported glottalic stop. Both approaches have internally consistent ways of accounting for the behavior of vowels of types (1) and (2), as well as for Winter's Law long vowels and tautosyllabic **-VRH-* sequences. At issue are the long vowels of type (3), and especially (3a), the Narten and *vṛddhi* cases. The quantitative theory, but not the glottalic contact theory, predicts that these should be acute.

3.2 Jasanoff 2004: Acuteness from Length

3.2.1 *Balto-Slavic and Germanic*

An attempt, basically along traditional lines, to relate the acuteness feature to the distinction between two kinds of long vowels in the other early IE languages was made in Jasanoff 2004. That approach is pursued further below.

Balto-Slavic and Germanic share an important isogloss in their treatment of final syllables. Both branches passed through a stage where a distinction existed between endings with long and hyperlong vowels. In Germanic this distinction is reflected in the bimoric : trimoric contrast (1.5.1). Trimoric long vowels in Germanic normally go back to sequences of the type **-VHV-*, as illustrated by the gen. pl. in PGmc. **-ōn̄* (< **-oHom*) and the adverbial ending PGmc. **-ō̄* (< *o*-stem ablative **-oh₂ed*). But trimoric **-ō̄* is also found in the nom. sg. of *n*-stems (OHG masc. *gomo*, *namo*, gen. *-en*; Go. nt. *namo*, gen. *-ins*), where, as argued earlier,[3] it is the regular reflex of the PIE amphikinetic *n*-stem ending **-ō* (cf. Lat. *homo*, *hominis*, Ved. *rā́jā* 'king', gen. *rā́jñaḥ*, etc.). Trimoricity in final long vowels in Germanic was the result of a subphonemic rule that assigned a redundant quantum of extra length to "real" (i.e., not laryngeally-generated) long vowels in absolute final position. When laryngeals were lost and sequences of

3 See especially ch. 1, note 50.

the type *-*VH*# and *-*VHV*# became *-*V̄*# and *-*V̄̄*#, respectively, the lengthened long vowel was identified with the second and phonemicized as *-*V̄̄*#.

Balto-Slavic appears to have closely paralleled Germanic. In Balto-Slavic, however, the sequences that yielded bimoric vowels in Germanic appear as acute, and the sequences that yielded trimoric vowels in Germanic appear as non-acute ("circumflex"). Examples with acute:

PIE		BSl.	Lithuanian	Germanic
*-*oh*$_2$	(thematic 1 sg.)	*-*ṓ*	*-u*, *-ù* (*-úo-*)[4]	Go. *-a* < *-*ō*
*-*oh*$_1$	(*o*-stem nom.-acc. du.)	*-*ṓ*	*-u*, *-ù* (*-úo-*)	OHG *-u* < *-*ō*[5]
*-*oh*$_1$	(*o*-stem instr. sg.)	*-*ṓ*	*-u*, *-ù* (*-úo-*)	OHG *-u* < *-*ō*
*-*eh*$_2$	(*ā*-stem nom. sg.)	*-*ā́*	*-a*, *-à* (*-ó-*)	Go. *-a* < *-*ō*
*-*ih*$_2$	("*devī*-stem" nom. sg.)[6]	*-*ī́*	*-i*, *-ì*	Go. *-i* < *-*ī*
*-*ās*	(*ā*-stem acc. pl.)[7]	*-*ā́s*	*-as*, *-às* (*-ós-*)	OE *-e*, Go. *-os* < *-*ōz*

Examples with non-acute:

*-*eh*$_2$*es*	(*ā*-stem nom. pl.)	*-*ās*	*-os*, *-õs*[8]	OE *-a*, Go. *-os* < *-*ɔ̃̄z*
*-*oh*$_2$*ed*	(*o*-stem abl. sg.)	*-*ā*	*-o*, *-õ*	Go. *-o* < *-*ɔ̃̄*
*-*oHom*	(all stems, gen. pl.)	*-*ōn*	*-ų*, *-ų̃*	OHG *-o* < *-*ɔ̃̄n*
*-*ō*	(*n*-stem nom. sg.)	*-*ō*	*-uo*, *-uõ*	Go., OHG *-o* < *-*ɔ̃̄*

4 In other words, *-u* (*-ù*), with shortening by Leskien's Law in absolute final position, but *-uo-* (*-úo-*) before an added pronoun or particle.

5 Germanic has no dual inflection as such in nouns and adjectives. But the old dual ending (OHG *-u* < PGmc. *-*ō* < PIE *-*oh*$_1$) is covertly present in the nom.-acc. pl. nt. (OHG *-u* < PGmc. *-*ō* < PIE *-*eh*$_2$) when it refers to the consituents of a mixed-gender noun phrase; cf. OHG *beidu framgiengun in iro tagun* 'both (= Zacharias and Elizabeth) were advanced in their days'.

6 See 1.3.4. The type is represented in Lithuanian by *martì*, gen. *marčiõs* 'daughter-in-law', and in Germanic by Go. *mawi*, gen. *maujos* 'girl'.

7 The PIE ending was *-*ās* < *-*āms* < *-*eh*$_2$*ms*; both the laryngeal and the nasal were lost in the protolanguage (cf. Mayrhofer 1986: 164). Acuteness is maintained in standard Lithuanian, even though the nasal has been analogically restored, at least in adjectives (def. adj. *geràsias*). The non-nasalized acute ending is on display in the illative plural (*galvósna*, *žiemósna*); cf. 2.4.1 (end) and 5.1.8.

8 The accent is never on the ending in nouns and adjectives, but cf. pronominal *jõs* 'they (f.)' *anôs* 'those (f.)', etc.

The correspondences are too striking to be coincidental. The question, therefore, is not *whether* the Germanic bimoric : trimoric distinction and the BSl. acute : non-acute distinction are cognate, but how, in phonological terms, the relationship should be understood. The proposal in Jasanoff 2004, which will be upheld here, was that the Germanic situation is original, and that the acute : non-acute contrast in Balto-Slavic was the result of an inner-BSl. re-phonologization. The difference between the extra-long, expansive articulation of the trimoric vowels and the "normal" long pronunciation of the bimoric vowels, I argued, was redundantly reinforced in Balto-Slavic by the insertion of an interval of *stød* or creaky voice to limit or check the outflow of air during the production of the bimoric, "shorter" long vowels. Eventually this led to a switch of markedness: the former extra long vowels became the new normal longs, and the former normal longs became the marked "acute" longs.[9]

3.2.2 *Acute vs. Non-acute Diphthongs*

The contrast between **-VH-* and **-VHV-* sequences was also inherited on a small scale in non-final syllables. One of the few examples of the word-internal treatment of an inherited **-VHV-* sequence in Balto-Slavic can be seen in the Baltic presents **-ā-* < **-eh₂-e/o-* (type Lith. 3 p. *sãko* 'say(s)', 1 pl. *sãkome*, etc.), thematized from the PIE *h₂e*-conjugation type in **-eh₂-* (the "*newaḫ-*type").[10] Unlike the majority of original (i.e., non-analogical, non-metatonic)[11] word-internal long monophthongs, the **-ā-* of these forms, as a cross-laryngeal contraction product, is non-acute, contrasting with the more typical acute of, e.g., the infinitive suffix Lith. *-óti*, Latv. *-ât* < **-āti* < **-aH-t-*. The scope of the acute : non-acute contrast in non-final syllables was subsequently extended by the creation of new acute diphthongs. A much-discussed case is the acute

9 Without wishing to make more than the quickest possible aside into the complex world of Scandinavian tonology, I note that the Danish *stød*, a marked feature, generally corresponds to the unmarked "accent 1" of Swedish and Norwegian, while the absence of *stød* corresponds to the marked "accent 2" of these languages. Under the analysis of Riad 2003, building on Ito and Mester 1997, *stød* can be interpreted as the result of "compressing" a disyllabic HL sequence into a single syllable. The point of typological interest is that glottal and/or glottalized consonants played no role in the process.

10 Cf. Jasanoff 2003: 139–41 and below, 6.3.1. The central claim of Jasanoff 2003 is that some PIE active presents and aorists inflected according to the "*h₂e*-conjugation"—that is, they took the "*h₂e*-series" personal endings 1 sg. **-h₂e(i)*, 2 sg. **-th₂e(i)*, 3 sg. **-e*, etc., rather than the "*m*-series" endings 1 sg. **-m(i)*, 2 sg. **s(i)*, 3 sg. **-t(i)*, etc.

11 "We speak of *metatony* [italics mine—JJ] if we find a reflex of the BSl. circumflex intonation where we would have expected a reflex of the acute intonation or vice versa" (Derksen 1996: 1). See below, 3.4.1.

nucleus of the BSl. word for 'crow' (Lith. *várna*, PSl. **vőrna* < Proto-BSl. **vȧ̱rnā̱*), which contrasts with the non-acute word for 'raven' (Lith. *vařnas*, PSl. **vôrnъ* < **u̯ornó-* (or **u̯órno-*?)).[12] The traditional opinion, accepted here, holds that the smaller bird (**vȧ̱rnā̱* < **u̯őrneh₂* lit. 'belonging to the raven, (female) raven-like bird') was a *vr̥ddhi* derivative of the larger one (**u̯orno-*). The pattern is well attested; similar cases from outside BSl. include OHG *hano* 'cock' < **kano(n)-* : *huon* 'chicken', lit. 'belonging to the cock' < **kāne(s)-*; Lat. *cervus* 'stag' < **ḱeru̯o-* : Toch B *śerwe* 'hunter', lit. 'stag man' < **ḱēru̯o-*; and OHG *swehur* < **su̯éḱuro-* 'father-in-law' (= Ved. *śváśura-* 'id.') : *swāgur* < **su̯ēḱuró-* 'brother-in-law', lit. 'belonging to the father-in-law' (= Skt. *śvāśura-* 'belonging to the father-in-law').[13] The phonological development of PIE **u̯ōrn-* to BSl. **vȧ̱rn-* presumably passed through a stage [*u̯ōˀrn-], where the **-ō-* that preceded the **-r-*, being long but not hyperlong, had the glottal acuteness feature. The contrast with **u̯orn-* in the word for 'raven', where there was no long vowel and hence no glottalization, was at first one of quantity, with glottalization redundant:

**u̯ōrn-* [u̯ōˀrn-] 'crow' : **u̯orn-* [u̯orn-] 'raven'

But the situation was transformed by the BSl. version of Osthoff's Law—the process, common to the majority of early IE languages, by which sequences of the form **-V̄RC-* were shortened to **-V̆RC-*. In Balto-Slavic this had the effect of making glottalization—now reinterpreted as a feature of the **-VR-* sequence as a whole—the only distinguishing difference between the formerly lengthened-grade [varˀn-] /vȧ̱rn-/ 'crow' and non-lengthened-grade [varn-] /varn-/ 'raven'.[14]

Acuteness bears a high functional load in initial syllables, where both acute and non-acute ("circumflex") diphthongs are common. Only in a minority of cases do acute diphthongs go back to an actual historical lengthened

12 The actual location of the PIE accent in this word, which was originally a color adjective, cannot be known with certainty, since both accent patterns would have led to mobility in Slavic (i.e., AP c) and quite possibly Baltic (Lith. class 4). In principle, **u̯ornó-* should have meant 'dark (brown)' (cf. Ved. *kr̥ṣṇá-* 'black') and **u̯órno-* should have had the individualized meaning 'one who is dark (brown)' (cf. Ved. *kŕ̥ṣṇa-* 'antelope'). In practice, either one could have developed into the normal word for 'raven'. For the sake of argument original oxytonicity is assumed in what follows.

13 On pairs of this type see especially Darms 1978.

14 Note the convention followed in this section and below: *V̄ˀR* = glottalized/"checked" long vowel + sonorant; *VRˀ* = glottalized/"checked" liquid/nasal diphthong. Osthoff's Law, it will be seen, was the step by which liquid and nasal diphthongs acquired their intonability, a property confined to Balto-Slavic within the IE family.

grade, however. More typically, the **-V̄RC-* sequence underlying an attested acute diphthong was produced by sound change from earlier **-V̆RHC-*. A laryngeal was in this sense the *indirect* source of the acute in forms like Lith. *gérti* 'to drink', Latv. *dzeŕt* 'id.' < **ger̲-t-* [ger^{ʔ}-] < **gēr-t-* [gē^{ʔ}r-] < **g^{u}erh$_{3}$-t-*; Lith. *bárti* 'to scold', Latv. *bãrt* 'id.', PSl. **bőrti sę* 'to fight' (R *borót'sja*) < **bar̲-t-* [bar^{ʔ}-] < **bōr-t-* [bō^{ʔ}r-] < **b^{h}orH-t-*; and Lith. *kálti* 'to beat, forge', Latv. *kaĺt* 'id.', PSl. **kőlti* 'to stab' (R *kolót'*) < **kal̲-t-* [kal^{ʔ}-] < **kōl-t-* [kō^{ʔ}l-] < **kolH-t-*. The **-V̆RHC-* > **-V̄RC-* rule also applied in cases where the PIE preform contained a syllabic liquid or nasal, whence derivations of the type **-R̥HC-* > **-iRHC-* > **-īRC-* [*-ī^{ʔ}RC-] > **-iR̥C-*. Examples are Lith. *pìlnas*, Latv. *piĺns*, PSl. **pőlnъ* 'full' (BCS *pȕn*) < **pi̯l̲-n-* < **pì̯l-n-* [pì̯^{ʔ}l-n-] < **pì̯lH-n-* < PIE **p$_{l̥}$h$_{1}$-nó-*;[15] Lith. *žìrnis* 'pea', Latv. *zir̃nis* 'id.', PSl. **zьrno* 'grain' (BCS *zr̀no*) < **źi̯r̲-n-* < **źì̯r-n-* [źì̯^{ʔ}r-n-] < **źi̯rH-n-* < PIE **ǵr̥h$_{2}$-no-*; and Lith. *vìlna*, Latv. *viĺna*, PSl. **vьlna* 'wool' (BCS *vȕna*) < **vì̯l̲-n-* < **ù̯ì̯l-n-* [wì̯^{ʔ}l-n-] < **(H)ù̯ì̯lH-n-* < PIE **h$_{2}$ù̯l$_{l̥}$h$_{1}$-neh$_{2}$-*.

The basic conception behind these derivations is the same as under every other variant of the quantity theory of acuteness, namely, that *acuteness is a reflex of normal vowel length*. As in Jasanoff 2004, the position taken here is that except in cases of analogy or metatony, all normal long vowels generated acuteness, regardless of whether they were long by IE inheritance, as in *várna*/**vőrna*, long by laryngeal lengthening, as in *bū́ti*/**bы́ti* or *bárti*/**bőrti*, or long by Winter's Law, as in *núogas*/**nâgъ*. The reason why an ending like the gen. sg. of *ā*-stems (Lith. *galvõs*) or the nom. sg. of *n*-stems (Lith. *akmuõ*, OCS *kamy*; cf. 2.2.6) came out non-acute in Balto-Slavic is that these endings were not "normally" long, but hyperlong (in Germanic terms, trimoric) at the time the acuteness feature was assigned. In circumflex forms like Lith. *vařnas* and acc. sg. *žiẽmą* (< **-ei-*), the first syllable was non-acute for the opposite reason: at the time of the assignment of acuteness, the syllabic peaks of the diphthongs **-or-* and **-ei-* were short.

3.3 Kortlandt: Acuteness from Glottalic Contact

A radically different approach to acuteness is associated with Frederik Kortlandt and his school. In numerous publications extending over more than forty years, Kortlandt has taken the position that the glottal component of acuteness in a vowel was the direct phonetic reflex of a neighboring laryngeal consonant

15 with root accent by Hirt's Law (**p$_{l̥}$h$_{1}$-nó-* > **p$_{l̥}$h$_{1}$-no-*), a rule discussed in 4.1.

or (after the discovery of Winter's Law) a glottalic stop.[16] In Kortlandt's view, the most recent common parent of Lith. *móteris* and PSl. **mắti* (for which he reconstructs **màti*, with short rising intonation, at the latest PSl. stage)[17] was **máHter-*, with an actual segmental laryngeal representing the **-h_2-* of the IE preform. Similarly, for the ancestor of Lith. *bárti* and PSl. **bőrti* (for Kortlandt, **bòrti*) he sets up **borH-t-*, making the root-final laryngeal (PIE **b^herH-*) the direct source of the acuteness of the adjacent liquid diphthong. For Winter's Law he posits a PIE (pre)glottalized stop whose "dissolution into a laryngeal and a buccal part" led to a development **noǧo-* (**ǧ* = (pre)glottalized stop) > **noHgo-* (*vel sim.*) > *núogas*/**nâgz*.[18] The laryngeal consonant **H*, according to Kortlandt, survived into the separate histories of Baltic and Slavic, where it was lost at different times in different environments. Some of the rules he stipulates for laryngeal loss are very specific, e.g., the purported early Slavic elimination of laryngeals "in pretonic and post-posttonic syllables," well before their loss in other positions.[19]

Kortlandt's ideas are carefully elaborated and involve detailed claims, many of them idiosyncratic and controversial, about the history of particular endings and grammatical categories. Some of these hypotheses will be examined at appropriate points in the discussion below. It may not be out of place here, however, to say a few words about the historical context of the glottalic approach. Kortlandt's accentological framework was a product of the 1970's, and bears many signs of its origin in this period. The 1960's and 70's were a time in IE studies in which the laryngeal theory was beginning to gain traction even in the most conservative circles, and ripples from the advent of generative grammar were making themselves felt as well. Revisionist accounts of PIE phonology that reflected the new thinking were in the air. Some of the ideas bandied about at this time, e.g., the elimination of lengthened-grade long vowels and of long and short **a*, were a holdover from the reductionism of the first generation of post-Hittite laryngealists (cf. 1.1.1). Other ideas, such as the glottalic theory, were a response to typological considerations that up to then had played no role in mainstream Indo-Europeanist thinking. "New" versions of the PIE stop system had been proposed before, but the main impetus for the glottalic

16 The foundational document is his dissertation (Kortlandt 1975). Other references are cited below.

17 Cf. ch. 2, note 27.

18 So Kortlandt 2008: 7, and in the same vein 2012a: 2: "In Balto-Slavic, the Indo-European unaspirated voiced stops dissolved into a sequence of glottal stop plus plain voiced stop." In Kortlandt's early writings the glottalic stops are described as ejective, not preglottalized.

19 Kortlandt 2006: 25, 28.

theory in the form adopted by Kortlandt was the much-quoted, almost off-the-cuff 1958 observation by Roman Jakobson that "no language adds to the pair /t/ ~ /d/ a voiced aspirate /dh/ without having its voiceless counterpart /th/" (Jakobson 1958: 23). This pronouncement, lent authority by the eminence of its author, was invoked in the canonical statements of the glottalic theory by Gamkrelidze and Ivanov in 1972 and Hopper in 1973.[20] Both papers, though differing in detail, reinterpreted the traditional voiced aspirates **b^h*, **d^h*, etc. as voiced (**b*, **d*, etc.) and the traditional voiced stops **b*, **d*, etc. as "glottalic," i.e., ejective (**p'*, **t'*, etc.). In addition to its (for some) agreeably Georgian-like appearance, the glottalic system offered several appealing features. It permitted a unified account of the parallel consonant shifts of Germanic and Armenian, which had, apparently independently, converted the traditional PIE voiced series to voiceless stops (cf. Go. *taihun*, Arm. *tasn* '10' beside Ved. *dáśa*, Gk. *déka*, Lat. *decem*, etc.). It also partly explained the peculiar root-structure constraints of Proto-Indo-European, which treated the simple voiced (i.e., purportedly glottalic) series as more highly marked than either the voiceless stops or the voiced aspirates.[21] For these and other reasons, the perspectives offered by the glottalic framework made it a topic of considerable interest for the next decade or two.

But the advantages of the glottalic theory came at heavy cost. To the extent glottalic stops made it easier to account for the voiceless treatment of the "voiced" series in two branches (Germanic, Armenian), they made it harder to account for the actually voiced treatment in seven or eight other branches (Indo-Iranian, Greek, Anatolian,[22] Italic, Celtic, Balto-Slavic, Albanian), including all the most archaic ones. While the IE root-structure constraints could indeed be taken to suggest a different alignment of the PIE stops, the older, more "original" system could have ceased to exist centuries or millennia before the dissolution of the PIE known to us from the attested languages. Efforts to find improved glottalic explanations for phenomena in the individual branches, such as Grassmann's Law in Indo-Iranian and Greek and Lachmann's Law in

20 There were also contemporary *non*-glottalic proposals, such as Emonds 1972, where the traditional simple voiceless stops were rewritten as voiceless aspirates and the traditional voiced stops were rewritten as voiceless.

21 The most intriguing such fact is the apparent ban on roots of the structure **DeG-* (i.e., with two simple voiced stops); both **TeK-* and **D^{h}eG^h-* are permitted and common. The constraint against **DeG-* would make phonetic sense if "**b*," "**d*," etc. had some marked secondary articulation, such as aspiration or glottalization.

22 Voicing in Anatolian is directly attested in the alphabetically written language Lycian. Here we have, e.g., *pddẽ* [-ð-] 'in front of, in place of', *vel sim.*, cognate with Hitt. *pēdan* 'place', Gk. *pédon* 'ground'.

Latin, were notably unsuccessful.[23] Meanwhile, the alleged linguistic universal that asserted the impossibility of the traditional PIE system was falsified by the discovery of the Austronesian language Kelabit, where such a system was actually attested.[24] By the end of the 1980's interest in the glottalic theory among practicing Indo-Europeanists had waned.

Kortlandt's interpretation of Winter's Law as a process that "dissolved" glottalic stops into segmentally distinct laryngeal and occlusive components can be found *in nuce* in his writings from as early as 1978. It is an integral part of his mature system, which sees Winter's Law, laryngeal lengthening, and acuteness as different facets of a single phenomenon. He consequently rejects the more prosaic understanding of Winter's Law as a case of lengthening before a voiced consonant as, e.g., in English,[25] and equally rejects the possibility that long vowels from any source other than laryngeal lengthening or Winter's Law can be acute. Both the Kortlandt school and the standard quantitative approach *do* agree that the acuteness of the long vowels produced by Winter's Law is phonologically regular. At issue is whether acuteness was also proper to non-laryngeal long vowels in *non*-Winter's Law environments, where there were no purported glottalic consonants to trigger it. To answer this question it will be necessary to turn to the material evidence, which is of a complex character.[26]

3.4 The Treatment of Inherent Long Vowels

3.4.1 *Métatonie Douce*

In a useful overview that reaches a different conclusion from the one favored here, Petit remarks that the disagreements over the treatment of long vowels often come down to etymologies: "Die Anhänger beider Systeme werfen

23 On these two rules see Joseph and Wallace 1994 and Jasanoff 2004, respectively. A perceptive survey and evaluation of the arguments adduced in support of the glottalic theory is given by Kümmel 2007: 299–310.

24 Cf. Blust 1974: 15; also Blust 2006. Weiss (2009b) has interesting remarks on the rarity, but not impossibility, of $T : D : D^h$ systems.

25 See Kortlandt 2012a: 3, replying to Kümmel 2007: 309, who takes this position.

26 It is inevitable, given the issues currently at the center of the field, that non-laryngeal, non-Winter's Law long vowels should now claim our attention. But it is important not to lose sight of the larger setting. *A priori*, there is no reason outside the context of the glottalic theory why long vowels of Winter's Law origin *should* have been treated differently from ordinary lengthened grades. For anyone other than a committed glottalicist, a finding that Winter's Law and "normal" long vowels had different intonational outcomes would be very marked indeed.

einander Etymologien an den Kopf, die die Frage entscheiden sollen, welche Intonation aus indogermanischen Dehnstufen zu erwarten ist" (Petit 2010: 103). This is true enough, and the image is apt. But it should not blind us to the fact that—to continue the metaphor—some etymologies make more effective projectiles than others. As in every other domain of IE linguistics, the most convincing etymological comparisons in BSl. accentology are those which establish connections between words that must be old because they could not have been productively formed within their respective traditions.

This observation applies with particular force to Baltic, where productive and semi-productive metatony—specifically, *métatonie douce*, the "circumflexion" of historically acute nuclei as part of a derivational process—is an omnipresent source of secondary non-acutes. Metatony in Lithuanian is above all associated with the large class of adjectival and deverbal abstracts in *-is* < **-i̯as* (e.g., *gỹvis* 'liveliness' : *gývas* 'alive, living'; *juõdis* 'blackness' : *júodas* 'black'; *stõvis* 'condition, state' : *stovėti* (3 p. *stóvi*) 'to stand'; *alkis* 'hunger' : *álkti* 'to be hungry', etc.), along with the formally related deverbative feminines in *-ė* < **-i̯ā* (e.g., *dỹgė* 'gooseberry' : *dýgti* 'to sprout'; *grė̃bė* 'rakings' : *grėbti* 'to rake'; *bė̃gė* 'track' : *bėgti* 'to run', etc.) and the derived nouns in *-ius* e.g., *vỹlius* 'deceit' : *vìlti* 'to deceive', *duõnius* 'bread-lover' : *dúona* 'bread', etc.). Since Stang 1966: 146 ff., it has generally been accepted that the circumflexion of these forms had its historical origin in a displacement of the ictus from earlier **-i̯as*, **-i̯ā*, and **-i̯us*. More recently, the picture has been clarified in a groundbreaking study by Larsson (2004), who establishes three important results:

> (1) retraction of the accent from **-i̯as*, **-i̯ā*, and **-i̯us* to a preceding acute root syllable was, as seen by Stang, a sound law that caused loss of acuteness in the syllable that received the accent (**gīvi̯as* > **gi̯vi̯as* > **gi̯vīs* > **gi̯vis* [gỹvis]);
>
> (2) retraction of the accent from **-i̯as*, **-i̯ā*, and **-i̯us* to a preceding *short* root syllable had the effect of lengthening the root syllable without introducing acuteness (cf., e.g., *gẽras* 'good' → *gẽris* 'goodness', *dìdis* 'large' → *dỹdis* 'size', *gilùs* 'deep' → *gylė̃*, acc. *gỹlę* 'depth');
>
> (3) when the accent was not on the **-i̯-*, there was no loss of acuteness (= metatony) and no lengthening (cf., e.g., *júodis* 'black horse' < **jō̯di̯as* 'one who is black' (contrast *juõdis* 'blackness' < **jō̯di̯as*),[27] *žìlis* 'gray-haired man' < **žìli̯as* (: *žìlas* 'gray'; contrast *žỹlis* 'grayness' < **žili̯as*), *sẽnė* 'old woman' < **sėni̯ā*).

27 On the "individualizing" function of initial accent cf. note 12.

The most natural phonetic interpretation of these developments, which go back to Common Letto-Lithuanian and probably to Common Baltic,[28] would be to assume that when the accent was displaced leftward from *-i̯u̯- sequences, the newly stressed root vowel received a quantum of extra length. If this vowel was short, the extra length was phonologized, resulting in an actual phonemic long vowel. Since the landing site of the shifted ictus was to the left of the added phonetic "coda," however, the resulting tonal contour was identified as falling, i.e., circumflex.[29] When the vowel that received extra length was already long, the added material did not introduce a third degree of phonological length, but was reflected intonationally. As with short root vowels, the placement of the ictus to the left of the incremental "coda" caused the long nucleus as a whole to be phonologized as falling, regardless of whether it was acute-marked or not before the retraction.[30] In the third case, where the sequence *-i̯u̯- was unaccented, there was no accent shift, no quantum of extra length, and no metatony.

Starting from phonologically regular beginnings, *métatonie douce* spread as a derivational marker to related nominal and verbal categories where it had no phonological basis. Here belong, e.g., deverbative *ā*-stems (e.g., *mokà*, acc. *mõką* 'means' : *mokĕti* 'to be able' (3 p. *móka*); *duobà*, acc. *duõbą* 'a hollow' : *dúobti* 'to hollow out'; *puotà*, acc. *puõtą* 'feast' : OPr. *poūton* 'to drink'), and even various classes of *o*-stems (e.g., *stõtas* 'stature' : *stóti* 'to step up'; *lõpas* 'a patch' : *lópyti* 'to patch'; *skiřtas* 'difference' : *skìrti* 'to distinguish', perhaps *giñklas* weapon' : *gìnti* 'protect'). The material is surveyed in greater detail by Stang (1966: 144 ff.) and especially Derksen (1996: 36–165), who (unconvincingly, in my view) proposes a sound law in connection with *-kla-*, *-ta-*, and other thematic suffixes. The importance of these facts for our present purposes is largely negative: the existence of metatony undercuts the value of derived forms with circumflex long vowels that might otherwise be taken as evidence for the antiquity of the non-acute treatment of long vowels. Thus, e.g., Lith. *žolẽ*, acc. *žõlę* 'grass' (vs. Latv. *zâle*, with acute), a derivative of *žélti* 'grow', is frequently cited in Kortlandt's writings (e.g., 1985a: 117; 1997: 26; 2004: 15) as evidence for the

28 Cf. Larsson 2004: 310 and especially 316–17 with her note 29.

29 It will be recalled that the circumflex accent, though rising in standard Lithuanian, was original falling, as it still is in Žemaitian and Latvian. The lengthening associated with *métatonie douce* was not compensatory in the usual sense: the *-i̯- that gave up its accent was not syncopated, but retained its full segmental value, later taking part in the contractions *-i̯u̯a- > *-ī- and *-i̯u̯ā- > *-ē-.

30 Presumably the perception of a falling tonal contour led speakers to suppress their perception of glottal constriction, which was otherwise invariably associated with rising contour.

circumflex treatment of long vowels, but is better taken—if it is old at all—from a preform **źalìi̯ā*, with secondary transfer to accent type 4 from phonologically regular type 2 (**žõlė*)[31] Similarly, Lith. *gėlà*, acc. *gẽlą* 'pain' (Kortlandt *ibid.*) forms a word equation with OHG *quāla* 'id.', seemingly pointing to an inherited non-acute lengthened grade (< **gᵘ̯ēlH-*). The apparent acute of PSl. **žā́lь* 'id.', however (Kapović 2009: 239), shows that we are dealing rather with secondary loss of acuteness in a deverbative *ā*-stem. Other contested but ultimately non-dispositive nominal forms with a long vowel are discussed by Petit 2010: 122 ff. and (in Slavic as well as Baltic) Villanueva Svensson 2011: 11–14.

3.4.2 Vr̥ddhi *and Narten Derivation*

Heading the list of cases that *do* shed light on the treatment of inherited long vowels is the now familiar Lith. *várna*, PSl. **vṓrna* 'crow' < **va̍r̲n̲ā̲* < **u̯ṓrneh₂*. Three competing etymologies can be found for this word in the recent literature. One is the *vr̥ddhi* account given above (3.2.2), which attributes the acute **-a̲r̲-* to the long vowel of tautosyllabic **-ōr-*; another, due to Kortlandt (1985a: 121), starts from a preform with a suffixal laryngeal not present in the differently-formed word for 'raven' (**u̯or-Hn-aH* 'crow' : **u̯or-u̯o-* 'raven' → **u̯or-no-*); a third, due to Petit (2004: 187 f.), begins with a laryngeal in both words (**u̯orH-neh₂* : **u̯orH-u-*), but eliminates it in 'raven' in the course of a multistep morphological derivation (**u̯orH-u-* > **varu-* → **varva-* → **varna-*). It is obvious that these ideas are not equally economical. The *vr̥ddhi* theory is "connected" at both ends: it links the acute in *várna*/**vṓrna* to a well-established IE derivational process and simultaneously explains the unexpected circumflex-to-acute metatony ("*métatonie rude*") in this word and other Baltic terms for female animals (e.g., *vìlkė* 'she-wolf' (: *vil̃kas* 'wolf'), *zùikė* 'female hare' (: *zuĩkis* 'hare'), and *šérnė* 'wild sow' (: *šer̃nas* 'wild boar')); the latter are either *vr̥ddhi* formations themselves or analogical to *várna*.[32] The other two theories, by contrast, are imaginative but desperately ad hoc attempts to avoid having

31 According to Larsson (*op. cit.* 316, note 29; see further Larsson 2005), OPr. (Elbing Vocabulary) *soalis* 'id.', with *-oa-*, confirms the metatonic origin of the long vowel. Kortlandt (*ibid.*) takes *žolẽ* from an otherwise undocumented root noun, with **-ā-* by a PIE monosyllabic lengthening rule in the nom. sg. The broken tone of Latv. *zâle* is an import from the verb *zel̂t*.

32 Nor are these the only examples. See Villanueva Svensson 2011: 30 ff. for more possible cases, and note especially Neri's brilliant explanation (*apud* Vine 2006: 139, note 1) of Latv. *siẽva* 'wife' as a *vr̥ddhi* derivative ('belonging to the home') of **ḱeiu̯ā* (*vel sim.*) 'household' (= Go. *heiwa* 'id.').

to accept the implication of the *vr̥ddhi* analysis.[33] Petit's claim (2004: 182) that pre-BSl. **u̯ōrn-* would have given **(v)urn-* < **vuorn-* in Lithuanian is not well-supported.[34]

Other non-metatonic lengthened grades are studied in a recent series of publications by Villanueva Svensson, especially Villanueva Svensson 2011, to which global reference is made for more extensive documentation of the categories reviewed below. A small but important group is the original stratum of lengthened-grade iteratives in **-eh₂i̯e/o-* ("**-āi̯e/o-*"), a formation well known from outside Balto-Slavic (cf., e.g., Lat. *cēlāre* 'to hide', Gk. *pēdáō* 'leap', etc.). Starting from modest beginnings at the BSl. level, these became enormously productive in Slavic (type **pěkajǫ* : **pekǫ* 'bake', **u-mirajǫ* : **u-mьr(j)ǫ* 'die', etc.). An inherited example is the remarkable Latvian iterative *lę̃kât*, *-ãju* 'jump' (base verb *lekt*), forming a word equation with Gk. *lēkãn* (Hesych.) 'to dance'. Here also belong *nę̃sât*, *-ãju* 'carry' (*nest*), forming an equation with Arm. *ansam* 'put up with' (< **h₁nēḱ-*; cf. Klingenschmitt 1982: 91 ff.), *tę̃kât*, *-ãju* 'flow' (*tecêt*), and *mę̃tât*, *-ãju* 'throw' (*mest*), cognate with OCS *-mětati* 'id.' and represented in Lithuanian by remade *mė́tyti*, pres. *mė́tau* 'id.'. All the Latvian forms have sustained tone, pointing to an acute root with lexical accent (**lḗk-*, etc.).[35]

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33 Derksen (2008: 528) misses the point when he says that Kortlandt's explanation "has met with scepticism because of its ad hoc character. I would argue, however, that a unique case of Balto-Slavic metatony calls for a unique explanation." Unique morphological alternations of the type *várna* : *vaȓnas*, Eng. *was* : *were*, or Lat. *est* : *sunt* are usually archaisms, and, as such, of the greatest possible value.

34 *Pace* Carrasquer Vidal 2013: 210. The *Paradebeispiel* for this alleged development is *pùlti* 'to fall' (pres. 3 p. *púola*, pret. 3 p. *púolė*), supposedly < **pōlt(e)i*. But it is exceedingly unlikely, in my view, that *pùlti* represents the *lautgesetzlich* outcome of a PIE (or just sub-PIE) infinitive with *ō*-grade. The simpler interpretation is that after the operation of the "real" Osthoff's Law in the BSl. period, the vowel pre-Lith. **-ǭ-* was introduced into the infinitive from the preterite **pǭl-ē-*, just as, e.g., **-ē-* was introduced into infinitives of the type *srẽbti* 'to slurp' from preterites of the type *srẽbė*. Lith. *pùlti* would then be the shortened reflex of recombined **pǭlt(e)i*. Cf. Stang (1966: 77) and Villanueva Svensson (2011: 30), who both also note the secondary character of the ordinal *aštuñtas* 'eighth' (< recombined **aštǭñtas*). On the remade *o*-stem acc. pl. in *-us* see 5.1.8.

35 Cf. Villanueva Svensson *ibid.* 27–8; Petit (2010: 136–8) surprisingly discounts the testimony of these forms. Related to Latv. *lę̃kât*, etc. are the Lithuanian iteratives with *-ī-* or *-ū-* in the root (e.g., *kýboti* 'hang', *klū́poti* 'kneel'); none of these, however, have an IE etymology. On the Slavic side, Pronk (2012: 222–25) notes that the Slavic iteratives in **-ati*, **-ajǫ*, unlike their Baltic counterparts, mostly belong to AP b, suggesting a non-acute root. But he also discusses a class of exceptions, chiefly associated with verbs that commonly occur with a prefix, in which the root vowel is shortened in BCS and Slovenian and the accent pattern

Among non-derived verbs a number of lengthened-grade forms go directly back to Narten presents (1.1.2). These include PSl. **sěćі* (< **-kti*) 'to cut' (pres. **sěkǫ* (AP c) < PIE **sēk-* ~ **sek-*)[36] and **ob-rěsti* 'to find', **sъ-rěsti* 'to meet' (< PIE **rēt-* ~ **ret-* 'run, turn'), both with acute.[37] The Baltic type seen in Lith. *ap-rĕpti* 'to cover' (pres. 3 p. *ap-rĕpia*, with circumflex variant *-rẽpia*) can probably be included here as well.[38] An interesting word equation is PSl. **cějǫ* 'expect' = Ved. *cáyati* 'perceive'; the PIE source in this case, as I will argue elsewhere, was probably not an ordinary Narten active **kᵘéi-ti* : **kᵘéi̯-n̥ti*, but a *h₂e*-conjugation Narten present with 3 sg. **kᵘéi̯-e*.[39] A Narten *s*-present **h₂ēis-s-* ~ **h₂eis-s-* (for the type see Jasanoff 2003: 192–3) underlies Lith. *ìeškau*, OLith. *ieszku* 'search', OCS *iškǫ*, *ištǫ* 'id.', with the same secondary conversion to an *sk*-present as in Alb. *njoh* 'I know' < **ǵnēskō*, Lat. (*g*)*nōscō* beside Hitt. *ganešzi* 'finds' < **ǵnēh₃-s-* ~ **ǵneh₃-s-*.[40]

Indirect reflexes of Narten presents are found in "Narten systems"—derivational families associated with Narten presents in which *ē-* and *ō*-grade take the place of expected *e-* and *o*-grade. PSl. **bĕrmę* 'burden' < **bʰér-men-* (cf. Ved. *bhárman-*) is an acute lengthened-grade *men*-stem of this type; the Narten character of the root **bʰer-* is well known from Toch. A 3 sg. mid. impf. *pārat* 'brought' (< Narten imperfect **bʰēr-*), OHG *bāra* 'bier', and MIr. *birit* 'sow'.[41] Other acute forms are the *ō*-grade collective/abstracts of the type Latv. *ruõta* 'adornment' (< BSl. **rō̯tā̯*) and Lith. *núoma* 'rent', Latv. *nuõma* 'id.', OR *namъ* 'interest' (< BSl. **nō̯mā̯*). Latv. *ruõta* is properly a derivative of the Narten present we know from PSl. **-rěsti*; the formation is the same as in Gk. *lóp-ē* 'cover'

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is the same as in AP a, e.g., Cr. (Neo-Štok.) *sìpati* 'to pour'/*pòsipati* 'to sprinkle', *ùmirati* 'to die', *prètjecati* 'to overtake', etc. These, in my view, are the old forms. Pronk's attempt to explain the AP a behavior as secondary is linked to Kortlandt's approach to the problem of *poluotmetnost'*, on which see 6.4.3.

36 The Slavic circumflex is by Meillet's Law; the weak stem appears in Lat. *secō* 'id.' In Baltic the long vowel is seen in the derived noun Lith. *pasĕkelis* 'blacksmith's hammer'.

37 So Villanueva Svensson *ibid.* 23, upholding the traditional etymology of *-rěsti* (: OIr. *rethid* 'runs') against *LIV* 501, where the root is set up as **reh₁t-*.

38 So too *grĕpia* ~ *grẽpia* 'snatch', *kvĕpia* ~ *kvẽpia* 'inhale' (: Latv. *kvêpt*, with acute), *trĕkšia* ~ *trẽkšia* 'crush', etc. The acute ~ circumflex alternation in these forms is discussed by Villanueva Svensson (2014), who makes a strong case for the priority of the acute.

39 Other probable reflexes of this type include Ved. thematic act. *krāmati* : mid. *kramate* 'stride' and act. **nā́vati* (impf. 3 pl. *anāvan*) : mid. *návate* 'roar'.

40 The BSl. forms presuppose the lengthened-grade stem form **h₂ēis-s(ḱe/o)-*. The weak stem **h₂eis-s(ḱe/o)-* (i.e., "**aisk-*") appears in Germanic (OE *āscian* 'ask', OHG *eiscōn* 'study') and Armenian (*hayc'em* 'search').

41 For the relevant verbal forms of **bʰer-* see most recently Jasanoff 2012: 129 ff.

(: *lépō* 'peel') and *lőgē* 'grain harvest' (: *légō* 'gather', replacing earlier **lēǵ-* ~ **leǵ-*). Associated with the lengthened-grade noun *ruõta* is the lengthened-grade iterative (originally denominative) present *ruõtât, -ãju* 'adorn; move about', with a divergent sense that testifies to its probable antiquity. The parallel BSl. **nə̰̄mā* 'rent', with lengthened-grade relatives in Go. *anda-nems* 'pleasant, *angenehm*' and Toch. B *ñemek* 'harvest' (< **nēm-*), has no iterative **nuõmât, -ãju* in Latvian, but the expected **nōmeh₂i̯e/o-* is attested in Gk. *nōmáō* 'deal out, wield' (: *némō* 'distribute').[42] The acute accentuation of these and other deeply embedded Narten-aligned forms is among the strongest evidence for the traditional view that inherent long vowels became acute in Balto-Slavic.

For the *s*-aorist and other inflectional categories of the verb with alleged non-acute reflexes of long vowels see 3.5 below.

3.4.3 *Final Syllables*

If the preponderance of the evidence from non-final syllables shows that long vowels became acute, the evidence from the end of the word can be read—wrongly, as we shall see—to point to the opposite conclusion. For reasons that will emerge below, monosyllabic forms will be discussed separately.

The number of PIE endings that contained an actual long vowel is not large. The famously problematic Lithuanian *o*-stem loc. sg. in *-e* (*-è*) < **-ēn* appears to rest on an early contraction of the *o*-stem endingless locative in **-e* with the postposition **-en*, as will be discussed in 5.2.2.2. Another case is the acc. pl. of *ā*-stems, reconstructible as **-ās* for late PIE and best preserved in Lith. ill. pl. *-ósna* (cf. note 7 above). The picture here is slightly complicated by the fact that the acc. pl. is acute in *all* declensions in Lithuanian (*-ùs*, ill. *-úosna* (*o*-stems); *-ìs*, ill. *-ýsna* (*i-* and consonant stems); *-ès*, ill. *-ėsna* (*ē*-stems)). It is difficult to settle on a single "correct" account of these forms, since there has been contamination in all directions, and an analogical role may also have been played by the *o*-stem nom. pl. in PIE **-ōs*, which would have given an acute as well (cf. 5.1.8). What is clear, however, is that *no* acc. pl. ending contained a laryngeal, and that the acuteness characteristic of the acc. pl. as a whole must therefore have been phonologically proper to a nucleus of forms with an inherited long vowel. One such locus of acuteness, whether or not the only one, was the BSl. *ā*-stem ending **-ās* < PIE **-ās*.

The evidence of the loc. sg. in **-ēn* and the acc. pl. in **-ās* is seemingly contradicted by the non-acute lengthened-grade vowel of the nom. sg. of consonant stems. Here belong above all *n*-stem forms like the now-familiar Lith.

42 On all these forms see Villanueva Svensson 2012/2013. The IE background of the type *lőpē, lőgē* is discussed by Vine (1998).

akmuõ and OCS *kamy*, continuing PIE **-ō* (< pre-PIE ***-ōn* < ***-on-s*; cf. 1.5.1), and *r*-stem forms like Lith. *duktẽ* and OCS *dъšti*, continuing post-PIE **-ē* (for PIE **-ēr* < pre-PIE ***-er-s*).[43] As previously discussed, these find their explanation in the fact that long vowels were redundantly lengthened in absolute auslaut in Balto-Slavic and Germanic, giving rise to non-acute and trimoric reflexes, respectively, in the two branches. Kortlandt, who rejects this idea, adduces two further forms that he claims illustrate the non-acute treatment, *viz.*, Latv. *âbuõls* 'apple', supposedly pointing to a nom. sg. in non-acute **-ōl*, and BCS *žȅrāv* (AP c) 'crane', supposedly pointing to a nom. sg. in non-acute **-ōu* (Kortlandt 1997: 26; 2004: 14). Neither word is conclusive. In *âbuõls* the Latvian dialect material is complicated, and it is far from obvious that the second syllable indicates a non-acute at all.[44] In *žȅrāv*, the claim that unshortened *-ā-* goes back to a historically non-acute vowel is dependent on Kortlandt's particular views about vowel shortening in Proto-Slavic. There are also troublesome variant forms in the other Slavic languages, especially Slov. *žerjàv* (AP a), with a shortened rising accent that looks very much like the reflex of an old acute.[45]

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43 The **-r* was not lost in PIE, but was deleted in Indo-Iranian and Balto-Slavic under the analogical influence of the *n*-stems. For the phonological development of non-acute **-ō* to *-y* and non-acute **-ē* to *-i* in Slavic see 2.2.6.

44 Cf. Villanueva Svensson 2011: 10, note 10, citing Endzelīns 1923: 28. On the surface, all three intonations (*-uõls*, *-uôls*, *-ùols*) are attested in this word; Seržants 2003: 103 gives an overview of the data. Pronk (2012: 207, note 1) defends Kortlandt's position.

45 Regarding the Slovenian form, Kortlandt's explanation is that "the short vowel of Slovene *žerjàv* was obviously taken from the homonym meaning 'burning', which has the expected short vowel in both Cz. *žeravý* and SCr. *žȅrava* 'live coal'" (Kortlandt 1985a: 113). He does not discuss the BCS variant *žȅrav* (cited by Kapović 2006a: 166), retracted from **žerȁv* by the Neo-Štokavian retraction (cf. ch. 2, note 60) and matching the Slovenian form.

Kortlandt's views on the interaction of accent, length, and tone in Slavic are summarized in Kortlandt 1994. His key assumption relating to *žȅrāv* is that "in posttonic syllables the glottal stop was lost without compensatory lengthening, whereas in stressed syllables it became a feature of the preceding vowel, comparable to the Latvian broken tone" (p. 13). In non-glottalic terms, this means that posttonic acutes, but not posttonic non-acutes, were shortened; the implication is that the unshortened *-ā-* of *žȅrāv* was historically non-acute. The more widely held position, adopted here, is that accent-independent acuteness was never in itself a determinant of lengthening or shortening, but that etymological acute vowels bearing a lexical accent, i.e., vowels *with rising tone*, were prone to dialectal shortening at the end of the period of Slavic unity (cf. ch. 2, notes 27 and 63). Neither a hypothetical pre-BSl. **gėrō̲u̯-* nor **gėrō̲u̯-*, under this view, would have undergone shortening in pre-Dybo's Law Slavic; the former would have given pre-Dybo's Law **žȅrā̲v-* and post-Dybo's Law *žȅrāv-* (AP c) in BCS, while the latter would have given pre-Dybo's Law **žȅrā̲v-*, whence post-Dybo's Law **žerā̲̀v-* > **žerȃv-*, and subsequently, with shortening of

Even if the hypothetical stem-forms **a̋bōl-* (*vel sim.*) and **gĕrōu̯-*, with non-acute **-ō-*, were secure, however, they could easily be secondary. For **a̋bōl-* the starting point could have been an analogical nom. sg. BSl. **ābō̍*, with non-acute **-ō* as in the *n*-stems; *-l-* would later have been re-added from the other case forms. For **gĕrōu̯-*, ultimately pointing to a PIE amphikinetic *u*-stem **gérh₂-ou̯- ~ *gr̥h₂-u-ˊ* (> **gruh₂-ˊ*),[46] two possible scenarios come to mind. The first would start from a BSl. nom. sg. **gerō̍* with analogical non-acute **-ō* as in the hypothetical **ābō̍* and re-addition of *-v-* from the other forms; precisely the same remodeling of a hysterokinetic or amphikinetic *u*-stem took place in Toch. B **poko* 'arm' (implied by oblique *pokai*) < pre-Toch. **bʰāǵʰō*, remade from an inherited nom. sg. in **-ēus* or **-ōus* (cf. OAv. *darəgō-bāzāuš* 'long-armed'). The other possible scenario would take off from the acc. sg., where the historically expected form would have been **gérh₂ōm* < **gérh₂omm* < **gérh₂ou̯m̥* by Stang's Law.[47] The **-ōm* of **gérh₂ōm* would in theory have given acute **-ōn* in pre-Slavic. But since acc. sg.'s are otherwise invariably non-acute in Balto-Slavic, acute **-ōn* would very likely have been de-acuted to **-ōn*, just as the *ā*-stem acc. sg. in **-ān* was de-acuted to BSl. **-ān*.[48] Later remodeling of **-ōn* to **-ōvin*, with *-v-* from the oblique cases, would have led directly to Kortlandt's non-acute **-avъ*.

3.4.4 *Diphthongal Endings*

A more serious challenge to the position that long vowels yielded acutes in final syllables comes from the circumflex of Lith. *-ais* (*-aĩs*) < **-ōis* < pre-PIE **-oi̯is*, the ending of the *o*-stem instr. pl., and Lith. *-ui* (*-uĩ* in adverbs) < **-ōi* < pre-PIE **-o-ei*, the ending of the *o*-stem dat. sg.[49] According to the scenario laid out in 3.2.2, a sequence of the type **-ōis* should first have given [-ōˀi̯s], with redundant glottalization, and then, following Osthoff's Law, **-a̯is* (*vel sim.*) in

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the long rising vowel, pre-BCS **žeràv-* (short rising, as in Slovenian) > conservative BCS **žerȁv-* (short falling, as in Čakavian) > Neo-Štokavian *žèrav*, with late lengthening before a final resonant to *žèrāv* (gen. *-ȁva*; AP a). The true history of the word remains in many points obscure.

46 See Gąsiorowski 2013 on the IE reconstruction.

47 Stang's Law—not to be confused with Stang-Ivšić's Law—is the PIE rule, discussed in Mayrhofer 1986: 163–4, by which word-final sequences that "should" have been syllabified as **-Vu̯m̥* and **-VHm̥* were in fact realized as **-V̆mm* > **-V̄m*.

48 At least according to the view preferred here; see 5.1.5.

49 For the analysis of PIE **-ōis* as consisting of a plural formative **-oi-* (seen also in the pronominal forms nom. pl. **toi*, gen. pl. **toisoHom*, dat. pl. **toibʰi̯os*, etc.) followed by a desinence proper **-is*, see Jasanoff 2009b: 142 ff. The derivation of PIE dat. sg. **-ōi* from **-o-ei* is uncontroversial. I know of no reason to believe (*pace*, e.g., Olander 2009: 155 ff.) that sequences like these remained uncontracted in the parent language.

Balto-Slavic. Similarly, **-ōi* should have given acute **-ō̲i* > **-ō̲i*. But surface acute diphthongs, like acute long nuclei generally, are disallowed in final syllables in standard Lithuanian;[50] if pre-Lithuanian had inherited historically acute **-a̲is* and **-ō̲i* (*vel sim.*), these, like historically non-acute **-ais* and **-ọ̄i*, would eventually have had to surface as "circumflex" *-ais* (*-aĩs*) and *-ui* (*-uĩ*). This would seem to indicate that the neutralization of the acute : non-acute contrast in diphthongal final syllables would have destroyed the value of *-ais* (*-aĩs*) and *-ui* (*-uĩ*) as evidence for *any* claim regarding the treatment of long vowels in final syllables. For reasons now to be discussed, however, standard opinion uniformly rejects the possibility that these endings were underlyingly acute. Even an author like Villanueva Svensson (2011), who rightly upholds the development of inherent long vowels to acutes in root and suffixal syllables, abandons his otherwise consistent stance where final syllables are concerned and concedes the regularity of the circumflex treatment in endings, in part because of *-aĩs* and *-uĩ*.

The reason for the general resistance to the idea that *-ais* (*-aĩs*) and *-ui* (*-uĩ*) were underlyingly acute is that they do not trigger Saussure's Law. Thus, in the declension of *rãtas* (2) 'wheel', the relevant instr. pl. and dat. sg. forms are *rãtais* and *rãtui*, respectively, not **rataĩs* < **-a̲is* and **ratuĩ* < **-u̲i*, as would have been expected if acuteness were underlyingly present. *-ais* (*-aĩs*) and *-ui* (*-uĩ*) contrast in this respect with two diphthongal verbal endings that *do* pattern as acute, the 1 sg. in *-au* (*-aũ*) and 2 sg. in *-ai* (*-aĩ*) of *ā*-presents, which induce Saussure's Law advancement of the accent from a non-acute root (e.g., 1 sg. *sakaũ* 'I say', 2 sg. *sakaĩ*, 3 p. *sãko*). The latter two endings also have a distinctive surface treatment in Žemaitian. This is seen in the contrast between the "acute" 2 sg. *sakẫ* (= standard Lith. *sakaĩ*) and the "circumflex" nom. pl. *lâ·ukã̃* (= standard Lith. *laukaĩ* 'fields'), the former with the accent remaining on the second syllable, the latter with Žemaitian retraction and secondary stress on the non-acute ending (cf. 2.1.6). It would seem, therefore, that the loss of acuteness in diphthongs in final syllables was a later development than Saussure's Law. This argument, however, cannot be accepted uncritically.

The 1 sg. in *-au* (*-aũ*) and 2 sg. in *-ai* (*-aĩ*) of *ā*-presents (*sakaũ*, *-aĩ*, 3 p. *sãko*) and *ā*-preterites (e.g., *supaũ*, *-aĩ*, 3 p. *sùpo* 'rocked'), along with the parallel *-iau* (*-iaũ*) and *-ei* (*-eĩ*) of *ē*-preterites (e.g., *vedžiaũ*, *vedeĩ*, *vẽdė* 'led'), play an outsized role in Lithuanian historical grammar. These endings furnish our only serious evidence for two standard assumptions:

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50 The word "surface" here is important: the close **ę̄* that resulted from the monophthongization of East Baltic **ei* and **ai* could (prior to Leskien's Law) be acute or circumflex like any other long monophthong. The contrast is seen, e.g., in the difference between the adjectival nom. pl. in *-í*(*e*) (< acute **-ę̄́*) and the *i*-stem voc. sg. in *-iẽ* (< non-acute **-ę̄*).

(1) final acute diphthongs, like acute monophthongs and the monophthongized diphthong *$\underline{ē}$ < *$\underline{ai}$, *$\underline{ei}$, triggered Saussure's Law; and

(2) the contrast between historically acute *-*ái*, *-*áu* and historically circumflex *-*aĩ*, *-*aũ*, though lost in final syllables in standard Lithuanian, is preserved in Žemaitian.

A little reflection, however, will quickly show that the verbal endings *-au* (*-aũ*) and *-ai* (*-aĩ*) are a very shaky foundation on which to erect potentially weighty conclusions. The 1 and 2 sg. are a well-known locus of intonational innovation in Lithuanian. Thus, the 1 sg. athematic ending *-mi*, despite its beguilingly ordinary appearance, goes back not to PIE *-*mi* but to Proto-Baltic *-*mai* (cf. OPr. *asmai* 'I am') and reflects a blend of PIE *-*mi* with the *i*-extended perfect or h_2e-conjugation ending *-*ai* < *-h_2e + *i*.[51] Proto-Baltic *-*mai* would properly have given non-acute *-*mę̄* in Proto-Lithuanian;[52] its actual reflex, however, is acute *-*$m\underline{ē}$*, which, following Saussure's and Leskien's Laws, gave Lith. *-mì*, *-míe-* (cf. OLith. *esmì* 'I am', *demì* 'I put', refl. *demíes*). The acuteness of the 1 sg. in *-*mai* must be analogical, a transfer from the more common thematic ending *-ù*, *-úo-* < *-$\underline{ō}$ < *-oh_2*, where acuteness was inherited. The more difficult 2 sg. endings, reconstructible as *-*$s\underline{ē}$ < *-*$s\underline{ei}$ or *-*$s\underline{ai}$ (athematic; cf. OPr. *-sei*) and *-*$\underline{ē}$ < *-*$\underline{ai}$ (thematic), are likewise both acute. They presumably acquired this feature from the structurally similar 1 sg.[53]

Against this background, we can now take a closer look at *ā*-present forms of the type 1 sg. *sakaũ* and 2 sg. *sakaĩ*, where the apparently acute diphthongs have the accent by Saussure's Law and remain acute and accented in Žemaitian. The overriding fact about the 1 sg. in *-aũ* is that it is not historically a diphthong at all. The "semithematic" inflection in *-*ā*- (> Lith. *-o-*) rests on a thematized suffix *-*eh_2e/*o*- (cf. 3.2.2), with a 1 sg. in *-*eh_2oh_2*. Since post-PIE *-*eh_2oh_2* would have given hyperlong (> non-acute) *-*ā* or *-*ō*, the attested *-aũ* must be analogical, formed by reapplying the normal thematic 1 sg. ending *-$\underline{ō}$ to the synchronic present stem in *-*ā*-.[54] The product of the recombination would, at least at the outset, have been disyllabic *-*ā$\underline{ō}$*. It is this sequence, rather than a true diphthong, that was ultimately responsible for the *-aũ* in *sakaũ*, with the

51 So already Jasanoff 2003: 75, note 20.

52 *Pace* Klingenschmitt 2008: 181.

53 Kortlandt's reconstruction of the 2 sg. thematic ending as *-*eHi* (Kortlandt 1978: 57 ff. and later publications) would correctly generate the acute, but there is no credible evidence for such an ending. Cf. Cowgill 2006: 537, 546–7, 552–5, 556–63.

54 The secondary character of this ending is also discussed by H. Hock (2015: 124), who draws partly different conclusions.

parallel *-ā̲ē̲ giving 2 sg. *sakaĩ*. Under the unobjectionable assumption that the contraction of disyllabic *-ā̲ō̲ and *-ā̲ē̲ to monosyllabic *-au̲ and *-ai̲ was *later* than the neutralization of the acute : non-acute contrast in inherited final-syllable diphthongs, the expected pre-Lith. instr. pl. in *-ai̲s and dat. sg. in *-ō̲i (< PIE *-ōis, *-ōi) could have lost their acuteness prior to the contraction of *-ā̲ō̲ and *-ā̲ē̲ to monosyllabic *-au̲ and *-ai̲. The following would be a possible scenario:

	o-stem instr. pl.	*ā*-pres. 1 sg.
1. Inherited situation: acute instr. pl. in *-ai̲s; disyllabic 1 sg. in *-ā̲ō̲	**rȁtai̲s*	**sȁkāō̲*
2. Acuteness eliminated in diphthongs in final syllables: *-ai̲s > *-ais	**rȁtais*	**sȁkāō̲*
3. Contraction of *-ā̲ō̲ to a new acute diphthong: *-ā̲ō̲ > *-au̲[55]	**rȁtais*	**sȁkau̲*
4. Saussure's Law: movement of the accent to a following acute syllable: **sȁkau̲* > **sakȁu̲*	**rȁtais*	**sakȁu̲*
5. Retention of acuteness in Žemaitian and later (re-)loss of acuteness in standard Lithuanian[56]	*rãtais*	*sakaũ*/*sakâu*

Several variations on this theme are thinkable.[57] The key point is that once we regard the verbal endings *-aũ* and *-aĩ* as contraction products rather than as true diphthongs, the evidence for analyzing the instr. pl. in *-ais* (*-aĩs*) and the dat. sg. in *-ui* (*-uĩ*) as historically "circumflex" disappears. A substantial part of

55 With spreading of the acuteness of the *-ō̲ to the non-acute *-ā- when the two merged into a single syllable.

56 It might seem an undesirable feature of this account that acuteness is stipulated to have been lost twice, once in step 2 and again in step 5. But the re-loss in step 5 would have been a trivial consequence of the general loss of acuteness in final syllables.

57 One might, e.g., contemplate limiting Saussure's Law to monophthongs and dating it before step 2. Arguing against this, however, is the operation of Saussure's Law in the word-internal suffix of the superlative (e.g., *geriáusias* 'best' < **gėriau̲sias*; cf. Jasanoff 2016, note 15).

the justification for claiming a special treatment for long vowels in final syllables thereby vanishes as well.

3.4.5 *Monosyllables*

A number of unexpected non-acute long vowels occur in monosyllables, leading Rasmussen (1992: 187 ff., 2007) to propose a Neogrammarian sound law by which words of one syllable containing a long vowel underwent "circumflex metatony" (i.e., failed to acquire or lost their acute marking) within the BSl. period. The rule, if real, would have been a species of monosyllabic lengthening: at an early BSl. stage when there were both hyperlong and normal long vowels, the long vowels in monosyllables, like long vowels in absolute auslaut, would have been realized with an extra quantum of length, causing them to surface as non-acute/circumflex. Rasmussen's proposal is quite distinct from the old view, associated with Wackernagel, that PIE monosyllables were lengthened within the protolanguage, giving rise to the classical *ē*- and *ō*-grade.[58] Nor is it to be confused with the uncontroversial fact that acute monosyllables of later origin were either shortened or circumflexed in Lithuanian (e.g., 3 p. fut. **bū́s* > *bùs* 'will be'; **dúos* > *duõs* 'will give').

The potential utility of a monosyllabic lengthening rule can be seen in connection with the falling (i.e., non-acute) tone of Latv. *sàls* 'salt' and *gùovs* 'cow', both former root nouns restructured as *i*-stems. In the first case, the PIE stem was probably simply **sal-*, nom. sg. **sā́l* < ***sal-s*, with length by Szemerenyi's Law (cf. Lat. *sāl*, *salis*, PSl. **sъ̀lь*). Rasmussen's rule would have caused the expected Proto-BSl. **s̄a̍l* to lose its acuteness; under the specific interpretation just proposed, the phonetic steps would have been PIE nom. sg. **sā́l* > pre-BSl. hyperlong **s̄a̍l* > BSl. non-acute **sa̍l* (→ Latv. *sàls*, with reapplied *-(i)s*). In the case of 'cow', where the inherited paradigm had, *inter alia*, a nom. sg. **gᵘṓu-s*, an acc. sg. **gᵘṓ-m* (< ***gᵘóu̯-m*; see note 47), and a general strong stem **gᵘóu̯-*, a Rasmussen-style solution would start from the acc. sg. **gᵘṓm* and proceed via pre-BSl. hyperlong **gṓn* to BSl. non-acute **go̍n*, whence, with restored **-v-*, **go̍vin* (> Latv. *gùovi*, back-formed nom. *gùovs*).[59] But there are other possibilities for both words. The non-acuteness of BSl. nom. sg. **sa̍l* could have been imported from the other case forms, which were non-acute by virtue of having a short vowel (cf. Sl. **solь*); or it could have been taken over from the non-acute lengthened-grade nom. sg. of longer sonorant stems. In 'cow', the non-acuteness of the acc. sg. **go̍(vi)n* could simply have been due to the general

58 Cf. Wackernagel 1896: 66 ff.

59 Similarly Petit 2010: 111 ff. and Villanueva Svensson 2011: 20, who both also begin from the acc. sg.

analogical de-acuting of the acc. sg., as in *ā*-stems and, conceivably, pre-Sl. acc. sg. **gĕrōvin* (or **gė̀-*) ← **-ōn* (above, 3.4.3). Other former lengthened-grade root nouns *are* acute. These include Lith. *žvėrìs*, acc. *žvėrį̃* (3) 'beast' (cons. stem gen. pl. *žvėrų̃*), Latv. *zvę̂rs*, and perhaps PSl. **zvě́rъ* (AP a) beside **zvȇrъ* (AP c);[60] and Lith. *nósis* (1) 'nose', Latv. *nãss* (with long vowel), PSl. **nȍsъ* (with short vowel). Neither word falsifies Rasmussen's rule, since the acute could in each case have been based on the underlying disyllabic accusative (**ǵʰu̯ér-m̥*, **nā́s-m̥*).[61] But neither, obviously, lends it any support.

Most of Rasmussen's other evidence is ambiguous or unconvincing. Putting aside the verbal forms to be discussed in 3.5, the most interesting remaining cases are in the personal and demonstrative pronouns. In Slavic the non-acute monosyllabic personal pronouns 2 sg. nom. **tŷ*, acc. **tę̂*, 1 pl. nom. **mŷ*, acc. **nŷ*, 2 pl. nom.-acc. **vŷ*, 1 du. nom. **vȇ*, acc. **vâ*, 2 du. nom.-acc. **vâ* make an impressive display against the acute disyllabic forms loc. pl. **nā́sъ*, **vā́sъ*, dat. pl. **nā́mъ*, **vā́mъ*, instr. pl. **nā́mi*, **vā́mi*, etc. But pronouns, as deictic elements, are inherently prone to discourse-related lengthening and shortening in actual usage, and monosyllables are more susceptible to such alteration than longer words. In anticipation of a fuller discussion of pronouns in 5.5, we can here take a cursory look at the second person forms. If Rasmussen's rule were correct, PIE **túH* 'thou' should have developed via **tū́* to pre-BSl. hyperlong **tū̂́*, whence Proto-BSl. non-acute **tū̀* and (evidently) the quasi-attested PSI. form **tŷ*.[62] But Lithuanian *tù* and Latvian *tu* are etymologically short

60 With circumflex in the AP c variant by Meillet's Law; on the less well-established AP a forms, see Villanueva Svensson 2011: 28 and Kapović 2009: 240. The root was **ǵʰu̯er-*, probably to be identified with the verbal root **ǵʰu̯er-* 'krumm gehen' (*LIV* 182). There is nothing to be said for setting up the root with an internal laryngeal (**ǵʰu̯eh₁r-*; so, e.g., Derksen 2008: 550); it is doubtful whether such structures existed in PIE.

61 Lengthened-grade accusatives like these could in principle either have been inherited, as was probably the case in the "Narten" root noun **ǵʰu̯ēr-* ~ **ǵʰu̯er-*, or analogical creations on the basis of the nom. sg., as would have been the case in the paradigm of **sal-* 'salt' (if indeed the acc. sg. ever had a long vowel at all). The reason for the difference in treatment between *nósis*/*nãss*, where acuteness carried the day, and Latv. *sàls*, where it was lost, may have been that 'nose' was like 'beast', with inherited lengthened grade and robust acuteness throughout the "strong" part of the paradigm, while 'salt' had **-ā-* only in the nom. sg. But this is only a possibility.

62 The reason for the qualification "evidently" is that we have not yet discussed cases where a lexical accent on a non-acute long vowel failed to undergo Dybo's Law because there was no syllable for it to move onto. Forms like these show that the lexical accent in such circumstances became a second and independent source of the Slavic circumflex. See further 5.5.1 and 6.6.3, note 102.

(< East Baltic **tù*),[63] and the Old Prussian form is acute *toū* (cf. 2.3.2), seemingly pointing to **tú* rather than **tū́* and contradicting Rasmussen's rule. In the plural, Lith. nom. pl. *jū̃s* 'you', with circumflex, agrees with Slavic **vŷ* and is "regular" by Rasmussen's rule, but disagrees with Latv. *jũs* and OPr. *ioūs*, which are both acute and "irregular." The various special lengthenings and shortenings that have taken place in these forms show why a Neogrammarian rule of monosyllabic lengthening at the BSl. level is unnecessary.[64]

3.5 Acute vs. Circumflex in Verbal Forms

The debate over whether and under what conditions long vowels gave acutes in Balto-Slavic makes frequent reference to a small number of highly controversial verbal forms. We are now in a position to treat these together.

3.5.1 *BCS* dònijeh, ùmrijeh, zàkleh, rȉjeh

The most important of the forms in question are the BCS aorists 1 sg. *dònijeh* 'I brought', *ùmrijeh* 'I died', *zàklēh* 'I swore', and *rȉjeh* 'I said', frequently cited by Kortlandt (e.g., 1997: 26; 2004: 15) in support of his position on long vowels. All are identically formed *s*-aorists with (notional) lengthened grade of the root;[65] *dònijeh* can serve as representative of the group. The initial rising tone on the preverb is an effect of the late Neo-Štokavian retraction. Prior to this, the root

63 The Žemaitian form *tọ̀* shows that Lith. *tù* is not simply the Leskien's Law shortening of acute **tū́*; cf. Stang 1966: 247.

64 An instructive example for anyone who doubts the importance of non-Neogrammarian factors in the development of potentially contrastive or emphatic monosyllables is the nom. pl. masc. of the definite article in German (*die*, as in *die Menschen*). The Proto-Germanic starting point was **þai*, as in Go. *þai*, OE *þā*, and OIcel. *þei*[*r*]. In Old High German this would regularly have given **thei*/**dei* under stress (cf. PGmc. **stainaz* > OHG *stein*) and **thē*/**dē* when unstressed (cf. PGmc. **habaiþ* > OHG *habēt* 'has'); the first would have given NHG **dei* and the second NHG **de*. Neither of these was the source of *die*. The actual form *die* arose through the *restressing* of unstressed **thē*/**dē*—i.e., its introduction into stressed (= "emphatic") environments, where it replaced the "correct" stressed form **thei*/**dei*. Under the accent, the **-ē* of **thḗ*/**dḗ* had the same treatment as the *-ē-* in words like *hēr* 'here', diphthongizing to *-ea-*, *-ia-*, *-ie-* in all but the earliest OHG monuments. Diphthongized *die* was subsequently generalized to unstressed contexts as well.

65 Since the *s*-aorist was productive in Slavic, only a minority of descriptive *s*-aorists actually go back historically lengthened-grade forms. Thus, e.g., BCS *ùmrijeh* rests on the PIE root **mer-* 'disappear, die', which made a root aorist with full- and/or zero-grade, but not lengthened grade, in the parent language (cf. *LIV* 439–40).

vowel was an accented long jat′ (*-ě̋-), which, as shown by the Posavian dialect form *zaklẽ*(*h*), had a neoacute accent (**doně̋h*) that was itself the product of retraction from a final jer by Stang-Ivšić's Law (2.2.3.3). *dònijeh* can accordingly be restored as **do-nĕs*(*s*)*ъ̀*, with accent on the ending.[66] The other three preforms were **u-merxъ̀*, **za-klęsъ̀*, and **rĕxъ̀*, all likewise with final accent.

None of this is controversial. But since the PIE *s*-aorist had Narten ablaut and root accent (**h₁nék-s-m̥*, etc.), there is an obvious historical problem: how did the accent come to stand on the final syllable in Slavic rather than in its inherited position on the root, where an accented acute vowel would have surfaced with a short falling accent in BCS?[67] If the [-acute] treatment had been regular for lengthened-grade long vowels, we could have argued that the accent had moved from **do-nĕ̋s*(*s*)*ъ* to quasi-attested **do-nĕs*(*s*)*ъ̀* by Dybo's Law. But it is never good practice in BSl. accentology to assume that the accentual properties of a morphologically embedded form derive by mechanical sound change from its PIE predecessor. The four verbs **nesti*, **merti*, **klęti*, and **reći* (**rek-*) are all mobile (AP c), making it extremely unlikely that their accentuation was in any way shaped by Dybo's Law, which targeted the lexical accent in immobile forms. In mobile words in Slavic, verbs as well as nouns, the position of the accent is governed by the general AP c "curve," not by the phonological history of this or that given form. In the aorist in particular, which is actually a preterite of mixed origin, the mobile curve prescribes final accent everywhere except in the 2–3 sg., where the historical form was in many cases an etymological imperfect (cf. BCS *dȍ-nese* < impf. **h₁nékes*, **-et*). The obvious interim conclusion, therefore, is that the pre-Slavic point of departure for 1 sg. *dònijeh* < **do-nĕs*(*s*)*ъ̀* was **-nē̱s-s-*(*ȍ*)*m*, with the expected regular acute root vowel and accent on the final syllable, not by Dybo's Law but *because the form was mobile and because this was the accentuation required by the mobile curve*. As everywhere in unaccented syllables in Slavic, acuteness was lost from the unaccented root prior to Stang-Ivšić's Law (cf. 2.2.7), and retraction from the final jer, when it took place, put a neoacute accent on the preceding syllable.

None of this absolves us of the need to explain *why* the accent was on the ending in all the aorist forms of AP c other than the 2–3 sg. But this is a higher-order question, like the question of why the AP c *present* paradigm is so rich in oxytone forms (cf. **nẽ̋sǫ*, **nesešĭ*, **nesetь̆*, etc.; 2.2.3.2) in comparison to its quasi-PIE source (**h₁nékoh₂*, **h₁nékesi*, **h₁néketi*, etc.). The explanation for the accentual curve in mobile verbal paradigms, a matter on which there is no

66 With substitution of 1 sg. *-h* < *-xъ*, the "ruki" form of the ending, for *-sъ*.

67 Cf. *lȉpa*, *dȁti*, *vrȁna*, etc. < PSl. **lípa*, **dáti*, **vórna*, and compare note 45. The Neo-Štokavian reflex of **do-nē̱s-s-*(*o*)*m*, with acute, would have been **dò-njeh* < **do-nĕ̋sъ* < **do-nĕ́sъ*.

consensus, will be discussed in chs. 4 (present) and 6 (present and aorist). But the methodological point can be appreciated now: an attempted direct phonological derivation of BCS 1 sg. aor. *dònijeh* or PSl. **něs(s)ъ̀* from PIE **h₁nék̑-s-m̥* is no more likely to be correct than a phonological derivation of PSl. 3 sg. pres. **nesetь̀* (: R *nesët*, etc.) from quasi-PIE **h₁néḱeti*.

3.5.2 *PSl.* *dâ, *Lith.* duõs

In Slavic, the aorists of AP c roots of the form *CV̄-* are acute and sigmatic in most of their forms (e.g., 1 sg. **dā́xъ* 'I gave', pl. **dā́xomъ*, **dā́ste*, **dā́šę*, etc.),[68] but monosyllabic and accentless in the 2–3 sg. (**dâ*; OCS also *dastъ*). Kortlandt identifies the Slavic type **dâ* with the similarly monosyllabic 3 p. of the Baltic future (Lith. *duõs* 'will give'; contrast 1 sg. *dúosiu*, 2 sg. *dúosi*, 1 pl. *dúosime*, etc.), which he traces to the 3 sg. injunctive of the *s*-aorist. This identification is questionable on a number of grounds, not least of which is that it rests on a highly idiosyncratic view of the PIE *s*-aorist. Since Kortlandt denies Narten ablaut and admits non-analogical lengthened grades only in monosyllables, he reconstructs the *s*-aorist with lengthened grade only in the 2–3 sg. (**dōHs*; similarly **lēHiš* for PSl. **lî* 'poured' and Lith. *liẽs* 'will pour') and attributes the *failure* of the laryngeal to induce acuteness in the Slavic and Lithuanian forms to a special BSl. rule of laryngeal loss after long vowels (**dōHs* > **dōs*, **lēHiš* > **lēiš*). The resulting bare long vowels, he claims, were the source of the attested circumflexes. But the supposed Vedic evidence for Kortlandt's proposed distribution of lengthened and full grade in the *s*-aorist has recently been reviewed in detail and shown to be without value by Kümmel (2013).[69] The specific form **dâ* can be explained in two obvious ways without recourse to stipulative distributions or rules:

> (1) The starting point was the one and only active aorist reconstructible for the root **déh₃-* in PIE, namely, the root aorist 2, 3 sg. **déh₃-s*, **déh₃-t* (: Ved. *ádāḥ*, *ádāt*, Gk. *édō*[*ka*]*s*, *édō*[*ke*], etc.); circumflexion was imposed

68 With accent on the root (**dā́xъ* for expected **daxъ̀* (like **něs(s)ъ̀*)) by Hirt's Law; see 2.2.3.2 and 4.1 below.

69 Much of the argument hinges on the interpretation of 1 sg. *stoṣam* (: *stu-* 'praise'), standardly taken to be a subjunctive, and 1 sg. *jeṣam*, pl. *jeṣma* (: *ji-* 'win'), standardly taken to be precatives (= optatives); Kortlandt claims these to be non-lengthened-grade injunctives. On *jeṣ-* see also Jasanoff 2003: 186 f.

by the requirement of the AP c curve, which called for an enclinomenon in this position.

(2) The starting point, as in the 2–3 sg. of ordinary *s*-aorists (cf. BCS *dȍnese* < **h₁nékes*, **-et*), was the *imperfect*: the long form **dâstъ* and the short form **dâ* were alternate realizations of underlying **dâst* < "**dō̆d-t*", the expected 3 sg. imperfect corresponding to 3 sg. pres. **dãstь* < **dastʲь* < "**dōd-tʲi*" (AP c; cf. OLith. *dúosti*, stem *dúod-*).[70] The accentual relationship of pres. **dastʲь* to impf. (> aor.) **dâ*(*st*) would have been exactly the same as that of pres. **nesetʲь* to impf. (> aor.) **nȅse*(*t*), likewise an enclinomenon; see below.

Rasmussen's rule has also been invoked to explain these forms, including (very tentatively) by the present author (Jasanoff 2004: 173–4). But given the doubtful status of the rule and the availability of other explanations, there is no reason to consider this possibility any further.

Turning to the Lithuanian future forms, the interpretation of *duõs*, *liẽs*, etc. as *s*-aorist injunctives with the "same" circumflex as in PSl. **dâ*, **lî* has nothing to recommend it over the more usual view that, like the *s*-futures of Indo-Iranian, Greek, Italic, and Celtic, the Baltic future goes back to a sigmatic desiderative present—in this case probably an *s*-present of the "Narten" type (**dḗh₃-s-mi*, **-si*, **-ti*, 3 pl. **déh₃-s-n̥ti*).[71] The desiderative interpretation implies that the 3 p. *duõs* is not historically a monosyllable at all, but a morphologically apocopated reflex of disyllabic **dúosti* < **dō̆-s-ti*,[72] with a primary ending

70 **dâ* was the phonologically regular reflex of **dâst* before obstruents and in pause; in connected speech, the final cluster would have been retained before vowels and sonorants. The need felt by speakers to maintain the cluster everywhere then led to its being (optionally) provided with a support vowel *-ъ* in positions where it would otherwise have been lost. The same process, *mutatis mutandis*, was responsible for the 3 sg. *present* ending OCS *-tъ* (*nesetъ*, *dastъ*, etc.), extended from apocopated **-tʲ* < **-tь*.

71 With generalization of Baltic **dō̆s-* (rather than **dēs-* < **dēh₃s-*, with non-coloration of the lengthened-grade vowel (Eichner's Law)) from the weak stem. The most important inner-Baltic reason to favor a Narten paradigm is that the *i*-inflection of the plural and dual forms (*dúosime*, *dúosiva*, etc.) presupposes a 3 pl. in **-s-inti* < **-s-n̥ti*. Hill (2004: 152 ff.) sets up a "normal" athematic *s*-present **déh₃-s-ti* : **dh₃-s-énti*.

72 The apocope of **-i* in the future, with attendant loss of **-t*, was probably phonologically regular in trisyllabic forms (of which there were many, since the future was formed from the infinitive stem), and analogically extended throughout the category. In this sense, the shortening of **dúosti* to **duõs*(*t*) in the meaning 'will give' was "morphological"; there

and the same historical acute as in the longer future forms (*dúosiu*, etc.). The circumflex in *duõs* has nothing to do with the deeper etymology of the form, but simply reflects the phonotactically obligatory conversion of acute to circumflex in unshortened monosyllables.[73]

3.5.3 *Lith.* gẽrė *vs.* bẽrė

The Baltic *ē*-preterite, a category of disputed and unclear origin, commonly shows lengthened grade of the root. In some forms (e.g., *bẽrė* 'strewed', *lẽkė* 'flew', *srẽbė* 'sipped') the long vowel has a circumflex; in others (e.g., *gẽrė* 'drank', *lẽmė* 'decided', *kẽlė* 'raised') it is acute. There is a clear synchronic pattern: the intonation of the preterite is circumflex when the infinitive is circumflex (*beřti*, *lẽkti*, *srẽbti*), and acute when the infinitive is acute (*gérti*, *lémti*, *kélti*). A diachronic pattern is discernible as well: the acute preterites and infinitives correspond to roots that historically ended in a laryngeal. Under the traditional theory of acuteness, most of these forms, namely, the acute infinitives (e.g., *gérti* < **gēr-t-* < **g^{u}erh$_3$-t-*), the non-acute infinitives of sonorant-final roots (e.g., *beřti* < **b^{h}er-t-*), and the acute preterites (e.g., *gẽrė* < **gēr-* < **g^{u}ērh$_3$-*), are phonologically regular. The non-acute preterites of sonorant-final roots (e.g., *bẽrė* for expected **bẽrė*) must be analogical; for these we can set up a proportion

gérti : *gẽrė* : : *beřti* : X (X = *bẽrė*)

Also analogical, as seen by Stang (1966: 389–90), are the non-acute preterites of obstruent-final roots (e.g., *lẽkė*, *srẽbė*). These must be assumed to have been created at a date prior to the introduction of lengthened grade into the infinitive:

non-acute *beřti* : non-acute lengthened *bẽrė*
: : non-acute **lèkti* : non-acute lengthened X (X = *lẽkė*)

When the non-acute lengthened grade was later extended to the infinitive, the circumflex was transferred as well, giving the attested *lẽkti*, *srẽbti*, etc.

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was no comparable apocope in the homophonous Old Lithuanian *present dúosti* 'gives' < **dōd-ti*.

73 The precise conditions under which metatony, rather than shortening, was the phonologically regular treatment is a topic of perennial discussion. A recent modern treatment of the future is Petit 2002. On monosyllabic circumflexion in general, see now Yamazaki 2016.

Kortlandt takes all these forms from the monosyllabic lengthened-grade forms of the *s*-aorist (i.e., in his system, the 2–3 sg.), with *gẽr-* < **gḗrH-s-* and *bẽ̌r-* < **bḗr-s-*. His rules are internally consistent and produce the desired outputs. But a connection between the lengthened grade of the *ē*-preterite and the lengthened grade of the *s*-aorist is highly unlikely. Word equations in which a Baltic *ē*-preterite is paired with an *s*-aorist elsewhere conspicuously *lack* lengthened grade: cf. Lith. pres. *vẽda* 'lead(s)', pret. *vẽdė*[74] (OCS *vedǫ* : aor. 1 sg. *věsъ*, OIr. *fedid* : subj. *fess-*); Lith. pres. *vẽža* 'convey(s)', pret. *vẽžė* (OCS *vezǫ* : aor. *věs-*, Ved. *váhati* : aor. *ávākṣam*, Lat. *uehō* : pf. *uēxī*); Lith. pres. *dẽga* 'burn(s)', pret. *dẽgė* (OCS *žegǫ* : aor. 3 pl. *žašę*,[75] Ved. *dáhati* : aor. *ádhākṣam*, Toch. B pret. III *tseks-*). A better comparandum for the long-vowel forms of the *ē*-preterite would be the non-sigmatic lengthened-grade preterite type of Lat. *legō* 'read', perf. *lēgī*. Lith. *ẽmė* 'took' would then form an equation with Lat. pf. *ēmī* 'bought', and Lith. *bẽrė* could be equated with Toch. A impf. *pārat* < **bʰēr(a)to* 'brought' (Jasanoff 2012). The issue, however, is far from settled.[76]

3.6 Summary

The preceding discussion has upheld a version of the traditional quantitative theory of acuteness, i.e., the position that all ordinary long vowels, whether of laryngeal or non-laryngeal origin, became acute in Balto-Slavic. According to the particular scenario developed here, the acute : non-acute distinction in Balto-Slavic was restructured from an earlier distinction between two kinds of long vowels—a "normal" type, corresponding to the bimoric long vowels of Germanic, and a hyperlong type, corresponding to the trimoric long vowels of Germanic. The inner-BSl. comparative evidence discussed in ch. 2 suggests that the phonetic expression of acuteness was a *stød* or passage of creaky voice. If so, this feature may have originated as a "checking" articulatory gesture that reinforced the relatively less prolonged character of the normal long vowels. Hyperlong vowels had two sources: PIE sequences of the type **-VHV-*, and PIE long vowels in absolute final position (**-V̄#*), both of which also gave trimoric vowels in Germanic. All other long vowels, including PIE lengthened grades

74 Lith. *-ẽ-* and *-ã-*, it will be recalled, are etymologically short (2.1.1).

75 With Slavic *žeg|ž-* for **deg|ž-*.

76 Villanueva Svensson (2014: 241 f.) makes an intriguing but (to my mind) inconclusive case for taking the suffixal **-ē-* of the *ē*-preterite in all cases from **-i̯i̯ā-*, with retraction and lengthening by the Stang-Larsson rule (3.4.1). That **-ē-* goes back to **-i̯i̯ā-* is uncontroversial in the *-yti* verbs; here there is no lengthening (*sakýti*, pret. *sãkė*, etc.).

and *vr̥ddhi* lengthenings, and vowels lengthened by syllable-final laryngeal loss and by Winter's Law, were interpreted as normal longs and were marked for acuteness. The shortening of long diphthongs by Osthoff's Law (*-$\bar{V}^{(?)}$*RC*- > *-*V̲R̲C*-) caused the acuteness feature to become contrastive in diphthongs, vastly increasing its structural importance.

The contrary view, in its strongest form, holds that acuteness was regular in laryngeally-produced long vowels and long vowels produced by Winter's Law, but never in inherent long vowels, i.e., vowels that, for whatever reason, were already long before the loss of laryngeals. One of the objects of this chapter has been to show that this position—the glottalic contact theory—is not well-supported. In root syllables, putting aside ambiguous lexical material and focusing on archaic Narten and *vr̥ddhi* formations (3.4.1), the evidence is heavily on the side of the acute treatment. The apparent counter-evidence of the unshortened long vowel in the BCS aorist type *dònijeh*, *ùmrijeh*, etc. is illusory; these forms were mobile (i.e., ending-accented) and hence not capable of manifesting the difference between acute and non-acute in the root syllable. A superficial case can be made for the non-acute treatment of non-laryngeal long vowels in final syllables. But here the strongest evidence consists of two pairs of endings which can be otherwise explained: the Lithuanian *n*- and *r*-stem nom. sg. forms in *-uo* (*-uõ*) and *-ė* (*-ẽ*), which were originally hyperlong; and the Lithuanian *o*-stem instr. pl. and dat. sg. in *-ais* (*-aĩs*) < *-*ōis* and *-ui* (*-uĩ*) < *-*ōi*, which were originally acute, their later circumflexion being due to a regular pre-Saussure's Law loss of acuteness in diphthongs in final syllables.

CHAPTER 4

Mobility and the Left-Marginal Accent

Ch. 2 introduced two major prosodic innovations of Balto-Slavic, the acuteness feature and the contrast, in initial syllables only, between the lexical and left-marginal accents. The familiar tonally-defined accents of the later BSl. languages ("rising," "falling," etc.) were the product of the interaction of these two more basic variables. As summarized in 2.4.3, the long rising ("acute") accent of Slavic was the realization of the lexical accent on an acute nucleus (Proto-BSl. **vȁr̲nā̲* > PSl. **vőrna*); the rising/non-falling accent of Lithuanian was the realization of *either* type of accent on a non-acute nucleus (Proto-BSl. **lȁnkān, *źèimān, *blu̍šān, *krùšān* > *lañką, žiẽmą, blùsą, krùšą*); the broken tone of Latvian was (*inter alia*) the realization of the left-marginal accent on an acute nucleus (Proto-BSl. **gă̄l̲vān* > *galv̂u*); and so on.

The origin of the acuteness feature was discussed in ch. 3, which presented a theory linking acuteness to vowel length along basically traditional lines. The goal of the present chapter is to explain the origin of the contrast between the two accent types and the relationship of the rise of the left-marginal accent to the creation of BSl. bilateral mobility. Here there can be no "traditional" theory, because the contrast between the lexical and left-marginal accents, in these terms, is not a traditional object of study. The expression "left-marginal accent" is a coinage of the present author, first used in Jasanoff 2008. As discussed in 2.2.5, post-Stang studies of BSl. mobility tend not to emphasize the phonetic difference between the root-accented forms in mobile and non-mobile paradigms. Where the contrast is explicitly acknowledged, it is either represented as incidental to the supposedly more basic distinction between underlyingly accented (e.g., /*lȁnkān*/) and unaccented (e.g., /*źeimān*/) first syllables (so Olander 2009)), or generated as a sort of afterthought by a polarization argument (cf. ch. 2, note 36). The approach taken here, by contrast, takes the phonetic difference between the lexical and left-marginal accents to be primary. Mobility, it will be maintained, grew out of a conditioned sound change that shifted the accent to the left in some, but not all of the forms in what would become mobile paradigms. The retracted accent thus generated, like the typologically parallel retracted accents of later Slavic (cf. 2.2.3.3 and 2.2.7, note 60), was phonetically and phonologically distinct from the accent that stood on the first syllable of inherited barytone words. Its phonological reinterpretation as a "zero accent" in Proto-Balto-Slavic was due to a later restructuring, and the

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conversion of phonologically unaccented forms to enclinomena in the Slavic sense was a later development still.

4.1 Post-mobility Accent Shifts: Hirt's Law

With the establishment of mobility, all inflectable word classes in Balto-Slavic—nouns, verbs, adjectives, and perhaps even pronouns—came in mobile and immobile varieties. Mobile nouns and adjectives had a lexical accent on the final syllable of the word in some case forms (e.g., the nom. sg.) and a left-marginal accent on the initial syllable in others (e.g., the acc. sg.). With the partial exception of *o*-stems, the distribution of right- and left-accented forms varied little from declension to declension. So too in mobile verbs: although East Baltic eliminated mobility in the finite verb,[1] the Slavic data show that some positions in the verbal paradigm (e.g., the 3 sg. pres.) consistently had final lexical accent regardless of conjugation class, while others (e.g., the 1 sg. pres.) consistently had left-marginal accent. Non-mobile nouns and verbs had fixed lexical accent on a non-final syllable. None of the other possible configurations of mobility and accent type were grammatically permissible. Thus, e.g., there were no immobile stems with alternating lexical and left-marginal accent on the first syllable, no immobile stems with fixed final lexical accent, and no mobile stems with alternating initial and final lexical accent.

The simple mobile : non-mobile distinction was everywhere overlaid by later sound changes. In standard Lithuanian the distinction between the lexical and left-marginal accents was lost, and the resulting single accent was subject to Saussure's Law. By this rule, as we have seen, a non-acute syllable gave up its accent to a following acute, producing a secondary split between immobile *várna* (class 1) and *rankà* (class 2; cf. 2.1.4), and mobile *galvà* (class 3) and *žiemà* (class 4; cf. 2.1.5). In Slavic the major post-mobility shift was Dybo's Law (2.2.4). This rule moved the lexical, but not the left-marginal accent one syllable to the right when it stood on a non-acute vowel. The result was the contrast between immobile acute nouns like **vőrna* (AP a; pre-Dybo's Law **vo̍r̲na*), with retention of the lexical accent in its inherited position, and immobile non-acute nouns like **lǫkȧ* and **ženȧ* (AP b; pre-Dybo's Law **lǫ̍ka*, **žė̍na*), with the lexical accent shifted rightwards. Unlike Lithuanian, Slavic gave up the difference between historically acute (**golvȧ*, acc. **gôlvǫ* < **ga̲l̲vā̲*, **gă̲l̲vān*) and

1 For the apparent exception of OLith. *žinomè*, *turimè*, etc. see 6.3.3.

historically non-acute (**zimȧ*, acc. **zîmǫ* < **źeimā̍*, **źĕimān*) mobile stems, which merged into AP c by Meillet's Law (2.2.3.2).

Saussure's and Dybo's Laws, operating separately in their respective traditions in the post-BSl. period, give us valuable information about the prehistory of BSl. accentuation, but tell us nothing about the origin of bilateral mobility as such.[2] Another early accent rule, this one of BSl. date, was **Hirt's Law**. Hirt's Law was a retraction rule that operated before the inner-BSl. loss of laryngeals. Its effect was to draw a non-initial accent onto an immediately preceding syllable containing a monophthong (including a syllabic liquid or nasal) followed by a tautosyllabic laryngeal:[3]

$$*\ldots CVHC_0\acute{V}\ldots \Rightarrow *\ldots C\acute{V}HC_0V\ldots$$

As the notation implies, the retracted accent was of the lexical, not the left-marginal type. Regularly cited examples are Latv. *grĩva* 'mouth of an inlet', PSl. **grī́va* 'mane' < BSl. **grī̍vā* < **gᵘriH-u̯éh₂* (cf. Ved. *grīvā́* 'neck'); Lith. *dū́mai* 'smoke', PSl. **dýmъ* < BSl. **dū̍ma-* < **dʰuH-mó-* (cf. Ved. *dhūmá-*); Lith. *pìlnas* 'full', PSl. **pȅlnъ* < BSl. **pìl̥na-* < **pl̥h₁-nó-* (cf. Ved. *pūrṇá-*); and Lith. *káulas* 'bone, stalk' < BSl. **kȧu̯la-* < **kah₂u̯ló-* < **keh₂u-ló-* (cf. Gk. *kaulós* 'stem, shaft').[4] These words are acute and immobile—class 1 in Lithuanian and AP a in Slavic.

Like Saussure's Law, Hirt's Law was widely believed in the pre-Stang period to have been a causal factor in the rise of mobility. That this is incorrect is shown (*inter alia*) by the mobile, originally oxytone stems BSl. **gī̍va-* ~ **gīvȧ-* 'alive' (cf. Lith. *gývas* (3), Latv. *dzîvs*, PSl. **žîvъ* (c)) < PIE **gᵘih₃-u̯ó-* (Ved. *jīvá-*) and **sū̍nu-* ~ **sūnù-* 'son' (cf. Lith. *sūnùs* (3), PSl. **sŷnъ* (c)) < **suH-nú-* (Ved. *sūnú-*).[5] If Hirt's Law had affected these words while they still had fixed accent on their second syllable, inherited **gᵘih₃-u̯ó-* and **suH-nú-* would have had no choice

2 Cf. 2.2.4. The idea that an early (Proto-BSl.) version of Saussure's Law was a *cause* of mobility, current in the classical period of BSl. accentology, has been almost entirely abandoned by mainstream Balto-Slavicists. Klingenschmitt is an exception; cf. ch. 2, note 30.

3 For the formulation see Olander 2009: 149 f. and the literature there cited. Hirt's own original statement of the rule (1895: 94), which referred to long vowels rather than to laryngeals, was naturally inaccurate.

4 With the regular treatment of sequences of the type **-AHI.C-* as **-AHI̯.C-* in Balto-Slavic; compare also Lith. *díeveris* (1), Latv. *diẽveris*, PSl. **dě́verь* (orig. AP a) 'brother-in-law, husband's brother' < BSl. **dȧi̯ver-* < **deh₂i̯-u̯ér-* < **deh₂i-u̯ér-* (: Ved. *devár-*, Gk. *daḗr* 'id.').

5 Old Lithuanian also has an immobile variant *sū́nus* (1), which some scholars have taken to be older than *sūnùs* (so Hock et al. 2015: 991–2, Derksen 2015: 435). Given the consistent mobility of the word in modern Lithuanian and Slavic, however, I consider it likelier that OLith. *sū́nus* is secondary, with analogical immobility from the semantically related kinship terms *díeveris*, *brólis*, and *žéntas* 'son-in-law'.

but to become immobile **gi̯va-* and **su̯nu-*, with the same treatment as in the canonical examples just cited (**gri̯vā*, **du̯ma-*, etc.). In fact, however, pre-BSl. **giHu̯o-* and **suHnu-* were already mobile in the lead-up to Hirt's Law, with final accent in forms like the nom. sg. (**giHu̯ós*, **suHnús*) and left-marginal accent in forms like the acc. sg. (**gìHu̯on*, **sùHnun*). When Hirt's Law applied, it converted nom. sg. **giHu̯ós*, **suHnús* to **gíHu̯os*, **súHnus*, with initial lexical accent, but had no effect on acc. sg. **gìHu̯on*, **sùHnun*, where there was already an initial left-marginal accent and the environment for Hirt's Law was not satisfied. The result was an immobile paradigm of an anomalous and disallowed type, with initial lexical accent in some forms (e.g., nom. sg. **gíHu̯os*, **súHnus*, etc.) and left-marginal accent in others (e.g., acc. sg. **gìHu̯on*, **sùHnun*, etc.). An analogical repair was needed: either the paradigm had to become "normally" immobile, with initial lexical accent throughout, or normally mobile, with alternating left-marginal and final accent. In the particular case of **giHu̯o-* and **suHnu-* the latter option was chosen. The forms with left-marginal accent (**gìHu̯on*, **sùHnun*, etc.) were preserved, but the forms affected by Hirt's Law analogically reverted to oxytonicity (**gíHu̯os, *súHnus* → **giHu̯ós, *suHnús*, etc.). Other lexical items (e.g., nom. **dúHmos*, **gríHu̯aH* : acc. **dùHmon*, **grìHu̯ān*) made the opposite choice, eliminating the left-marginal accent (**dùHmon, *grìHu̯ān* → **dúHmon*, **gríHu̯ān*).[6]

Hirt's Law also applied to sequences that could not have existed prior to the creation of bilateral mobility. Thus, e.g., the loc. pl. of historically oxytone *ā-, o-, i-*, and *u*-stems entered upon their BSl. history with columnar accent, as in Ved. *-ā́su, -éṣu, -íṣu, -úṣu*. The introduction of bilateral mobility caused the inherited forms to become pre-BSl. **-aHsú, *-oišú, *-išú, *-ušú*, with morphological displacement of the accent to the final syllable.[7] Slavic confirms the final accent for the *o-, i-*, and *u*-stems, where the attested forms point to **-ěxъ, *-ьxъ, *-ъxъ*,

6 Kortlandt, in numerous publications (e.g., 1994: 95; 2005: 117), offers a different analogical explanation for the apparent non-application of Hirt's Law in words like **suHnu-*. Correctly noting that Hirt's Law would not have operated in trisyllabic forms like the instr. sg. (cf. Lith. *sūnumì*), instr. pl. (Lith. *sūnumìs*), or loc. pl. (Lith. loc. pl. (dial.) *sūnusù*), where the accented ending stood more than one syllable away from the root, he proposes that the trisyllabic forms were the starting point for the analogical reintroduction of final accent into forms like the disyllabic nom. sg., where Hirt's Law *did* apply (i.e., **suHnús* > **súHnus* (Hirt's Law) → **suHnús* (analogy)). There is nothing inherently impossible about this scenario, though its reliance on a handful of trisyllabic oblique case forms is obviously an undesirable feature. In an *o*-stem like **giHu̯o-*, where there were fewer *m*-cases (cf. Lith. instr. sg. *gývu*, pl. *gyvaĩs*), the basis for Kortlandt's analogy would have been very narrow indeed.

7 *Pace* Olander 2009: 192; see 5.3.1. Note, as a practical matter, that "ruki" effects are shown in BSl. preforms except in absolute final position, where writing **-iš, *-uš* for the endings that appear as Lith. *-is, -us* and PSl. *-ъ, -ъ* would have seemed unnecessarily pedantic.

respectively; revealing in this respect is Slov. *možẹ́h* (: *mộž* 'husband'), with long *-ẹ́-* indicating a neoacute (**-ẽ̋-*) produced by late retraction from the final yer. In the *ā*-stems, by contrast, the PSl. form was **-ắxъ*, with retraction from **-aHsù* by Hirt's Law. Slovenian here has *glavàh*, with short *-à-* from PSl. **-ắ-*. If Hirt's Law had been earlier than the fixation of the accent on the last syllable the Slovenian ending would have been **-áh*, with neoacute lengthening from PSl. **-axь̀*.[8]

4.2 Theories of Mobility

For a full review of the literature dealing with the origin of mobility the reader is referred to Olander 2009: 14–46. The selective survey that follows is intended mainly to provide a context for the analysis developed in 4.3 and subsequent sections.

4.2.1 *Saussure 1896*

Olander's characterization (17) of Saussure's ten-page "Accentuation lituanienne" (1896) as "perhaps the most influential pages ever written on Balto-Slavic accentology" is undoubtedly correct. Saussure's article begins with the canonical statement of what we now know as Saussure's Law, an earlier version of which had appeared in 1892. The real focus of the discussion, however, is on mobility in the strict sense, of which Saussure can be considered the discoverer. He assigns a pivotal role to what we would now call hysterokinetic consonant stems. These become bilaterally mobile in Lithuanian, a development Saussure explains by positing a retraction from medial syllables:

N. V.	**duktẽ̃*	>	*duktẽ̃*
A.	**duktẽrin*[9]	>	*dùkterį*
D.-L.	**duktẽrĭ*	>	*dùkterĭ*
G.	**dukterès*	>	*dukterès*
I.	**dukterimì*	>	*dukterimì*; etc.

The pattern thus established, Saussure says, was analogically transferred to oxytone vocalic stems. He cites the example of the oxytone *u*-stem *sūnùs* (= Ved. *sūnú-*), where the gen. sg. remained *sūnaũs* (with final accent like

8 See 5.3.3–6 below. Examples of the interaction of Hirt's Law with mobility in verbal paradigms will be found scattered through ch. 6; see especially 6.6.2–3.

9 Saussure's anachronistically modern accent markings notation are retained.

dukterès), but the acc. sg. became *sū́nų* (with initial accent like *dùkterį*), the nom. pl. became *sū́nūs* (like *dùkteres* < "**duktḗres*"), and so on. No further examples are given. The remainder of the discussion of mobility is devoted to special problems, such as the failure of oxytone pronoun stems (e.g., *anàs* 'that (one)', *katràs* 'which (of two)') to develop mobility and the failure of the *o*-stem nom. pl. to shift the accent to the root (e.g., *dievaĩ* for expected **diẽvai*). The possibility of a direct link between the Lithuanian mobile paradigm and the Vedic/PIE amphikinetic type *pánthāḥ*, gen. *patháḥ* is raised by Saussure but rejected on grounds of the accentual mismatch in the nom. sg. (*pánthāḥ* ≠ *duktẽ*, *sūnùs*). Latvian is briefly discussed, but there is no mention of Slavic.

Saussure's embryonic "doctrine" thus amounts to three investigable claims: (1) consonant-stem forms like Lith. *dùkterį* arose by retraction from **duktèrin*; and (2) mobile vowel stems correspond to historically oxytone stems which (3) joined the type of *duktẽ*, *dùkterį* analogically. In the long century since Saussure wrote, (2) has effectively been settled in Saussure's favor, while (1) and especially (3) remain live issues.

4.2.2 *Oxytonicity and Mobility*

Saussure's exclusive focus on Baltic was a strategically astute move, since the transparency of Lithuanian allowed a degree of analytical clarity that would not be attainable in Slavic until Stang's work sixty years later. But Slavic could not long be kept out of the picture. A less felicitous Slavic analogue of Saussure's Law had already been proposed by Fortunatov in 1880, and later scholarship invariably discussed Baltic and Slavic together. On the question of mobility, three strands of thinking emerged in the post-Saussure period.[10]

The most conservative of these need not detain us long. This was the so-called "classical accentology" approach, spearheaded by, among others, the second-generation Neogrammarian Hermann Hirt (cf. above). The Neogrammarian temper had little appreciation for Saussure's system-wide perspective; the focus of classical accentology was on accent and intonation-based sound laws, which at the BSl. level meant chiefly Saussure(-Fortunatov)'s Law and a prelaryngeal version of Hirt's Law. The unviability of this approach became clear after Stang's work and the post-Stang discoveries described in ch. 2.[11]

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10 I omit from the survey that follows the characteristically brilliant but a prioristic and empirically disengaged work of Kuryłowicz; see ch. 2, note 14.

11 None of this is to deny the immense value of the work done by early and mid-twentieth-century accentologists at the level of the individual languages and philologies—work that laid the groundwork for the later syntheses of Stang and the Moscow Accentological School. But the methods favored by the scholars of this period were not conducive to

The second strand, and the one closest to Saussure's own thinking, was pursued and developed by Pedersen (1933). A major problem, as Pedersen recognized, was the precise nature of the retraction in *dùkterį* (< **-tėr-*). Saussure had been notably non-committal on this point, remarking merely, in lines that have been quoted many times since, "Il est malheureusement difficile de dire le caractère qu'aurait cette loi, car il y a des obstacles à la transformer en loi phonétique pure et simple" (1896 [1922]: 533, note 1). Pedersen, accepting the irremovability of Saussure's unspecified "obstacles" (see 4.4.2 below), envisaged a kind of morphological sound law by which a non-final accent that contrasted with a final accent in the same paradigm was "exaggerated and anticipated" by being drawn as far to the left as possible. This claim—that the accent was retracted from medial syllables in mobile paradigms but not elsewhere—became known as Pedersen's Law. Pedersen's Law and traditional analogy—the latter to motivate the transfer of mobility from consonant to vowel stems—became the explanatory toolkit of choice for Kortlandt,[12] Rasmussen, and other post-Stang scholars unwilling or reluctant to admit mobile vowel stems in late PIE.

The third post-Saussure tendency, associated with Meillet and later Stang, was born of a more radical dissatisfaction with Saussure's account of the spread of mobility from consonant stems. Meillet and Stang de-emphasized both sound change and analogy (Meillet rejected Hirt's Law altogether) and saw mobility, at least in *i-, u-* and *ā*-stems, as a retention from PIE. Also inclined to this position, though with an important difference, was Illič-Svityč (1963 passim). Stang had followed Meillet because, for him, AP a (**vőrna*) and AP b (**lǫkȁ*) in Slavic went back to inherited immobile barytones and oxytones, respectively, leaving him with no choice for AP c except the supposedly mobile *i-, u-, ā-* and *o*-stems that his logic forced him to assume for PIE (cf. 2.2.4). Illič-Svityč, as the co-discoverer of Dybo's Law, recognized that Stang's immobile oxytones of AP b were in fact really shifted barytones (**lǫkȁ, *žẽnȁ* < pre-Dybo's Law **lǫ̀ka, *žẽna*). For him, therefore, AP c and the corresponding Lithuanian classes (3 and 4) could be identified with the oxytones of the other IE languages, and he produced ample lexical evidence beyond Saussure's

recovering "big picture" developments. A 1926 letter from Trubetzkoy to Jakobson gives one astute observer's reaction to the situation on the Slavic side in the interwar period: "Slavic accentology is a hopeless business. The only effect of the "revived activity" on this "front" during the last fifteen years has been that each Slavist has his own accentual system which differs fundamentally from that of the others" (quoted and translated by Stankiewicz (1993: 33, note 3) from Trubetzkoy 1975: 91).

12 At least before 2009; see below.

sūnùs/*sūnú-* to establish this result.[13] But at the PIE level he preferred to speak of an "oxytone-mobile" type, thus associating himself with the possibility that BSl. mobility had been inherited from the parent language. Inherited mobility became a settled point for Dybo and his colleagues, who in equating BSl. mobility with oxytonicity in the other branches routinely assumed, at least implicitly, the priority of the former.[14]

Of the main lines of thinking that grew out of Saussure's 1896 article, then, the "Hirt" (= Neogrammarian) strand was in the end mostly abandoned, while the "Pedersen" (= retraction + analogy) strand and the "Meillet" (= inherited mobility) strand, though coming from different angles and disagreeing on the key question of cause and effect, converged in upholding Saussure's view that mobile nouns in Balto-Slavic were the historical counterparts of the oxytone stems of the other IE branches. In the highly contentious discourse surrounding the origin of mobility, the etymological identity of mobility and oxytonicity in nouns became a sort of "fundamental theorem" of BSl. mobility. We will take it for granted in what follows.[15]

4.2.3 *Evaluation*

Despite their agreement on the link between mobility in Balto-Slavic and oxytonicity elsewhere, the modern Pedersen- and Meillet-based theories of mobility are driven by altogether different conceptions of the problem. The Pedersen approach is essentially analogical. In the most obvious sense, it assumes the copying on a vast scale of the bilateral accentual curve of archaic words like **dukter-* onto earlier oxytone vocalic stems like **gal̲vā̲*, **sū̲nùs*, **mintìs*, etc. For such words to have adopted wholesale the morphological properties of consonant

13 Summarized in §§34, 67 of Illič-Svityč 1963 and Illič-Svityč 1979.

14 Indeed, the later Moscow School developed a very particular doctrine on mobility, identifying the BSl. descriptive contrast between "dominant" and "recessive" morphemes with a hypothetical tonal contrast that they then projected back to PIE (see, e.g., Dybo, Zamjatina, and Nikolaev 1990: 107–8, quoted by Olander 2009: 33–4). This was a fundamental error, in my view, that eventually undercut some of the group's most impressive achievements. A summary of post-1990 developments in Moscow School thinking is given by Lehfeldt 2009: 28–9; see also the critical evaluation by Vermeer in the same volume (Vermeer 2009, especially pp. 147 ff.).

15 Lest there be any ambiguity about the term, the word "oxytone" will henceforth be used to refer to 1) *o-* and *ā*-stems where the accent stood on the stem vowel; 2) *i-* and *u*-stems, mostly originally proterokinetic (1.1.2), where the position of the accent was regularized to stand on the **-(e)i-* or **-(e)u-*; and 3) any other non-monosyllabic stems in which the accent stood on the ending in the nom. sg.

stems would be without parallel in an IE language.[16] Pedersen's "Law," as critics have noted, is not a Neogrammarian rule: the non-final accent in **duktèrin* was "anticipated and exaggerated" not by sound change, but by analogy to the inherited bipolar pattern in root nouns (**dḭéu̯-* ~ **diu̯-´*, etc.). Arguments of this type have already been encountered in ch. 2. Kortlandt, in a number of publications, assumes both earlier and later versions of Pedersen's Law: the earlier version applied in the BSl. period and produced bilateral mobility;[17] the later version applied within Slavic, where it gave rise to the left-marginal accent by polarization ("the stress . . . was also retracted within the initial syllable of barytone forms in paradigms with mobile stress, yielding a falling tone"; Kortlandt 2005: 120, 2006: 27). As Olander remarks in his discussion of this scenario, it is hard to see why the mere fact of the existence of bilaterally mobile paradigms would have induced speakers to take a step as drastic as introducing a tonal contrast, even in short syllables, where none existed previously (Olander 2009: 210–12).[18] More conventional Pedersen's Law accounts ignore the special character of the left-marginal accent entirely.

As for the modern-day survival of the theory that BSl. mobility was inherited from PIE, it is hard not to be reminded of "Teeter's Law," the facetiously formulated but serious observation that specialists in one or another branch of a language family tend to overrate the archaism of that branch's most characteristic features.[19] However tempting it may be for Balticists and Slavicists to assume that the BSl. type of mobility was "always there," it is scarcely possible, taking a larger view of the IE family, to accept the idea that the ubiquitous mobile *i*- and *u*-stems of Balto-Slavic could all have independently lost their mobility in Vedic, Greek, and Hittite(!), while root nouns and a limited number of obviously archaic suffixed consonant stems agreed in remaining mobile in these languages. It is even more difficult to believe that thematic (*o*-) stems, or the *ā*-stems derivationally founded on them (**-ā-* = **-e/o-* + h_2; cf. 1.2.2), were mobile in the parent language. BSl. mobility, it will be recalled, is quite unlike PIE mobility as described in ch. 1. In addition to the gross differences—the exclusive "bilaterality" of BSl. mobility and the disproportionate prominence of

16 So Stang 1966: "Zu einer solchen Entwickelung sind mir keine Parallelen bekannt." See further the extended discussion by Olander (2009: 48 ff.).

17 Since 2009 (76–80), Kortlandt has characterized this version of the rule as a regular sound change.

18 The secondary circumflexion of neuters like *kẽr* 'heart' and *skõr* 'excrement' (for phonologically regular **kḗr*(*d*) and **skṓr*) in Greek is in no way comparable to the syllable-internal retraction that Kortlandt assumes for Slavic. The Greek forms, which are analogical to contracted neuters like *ẽr* 'spring' < *éar* and *phõs* 'light' < *pháos*, merely exploit a phonological contrast already well-established in the language.

19 See https://en.wikipedia.org/wiki/Teeter's_law (accessed May 4, 2016).

mobile vowel stems—there are endless disagreements of detail. In PIE declension the nom. sg. and acc. sg. are strong cases, opposed to the gen. sg., dat. sg., and instr. sg. (*inter alia*), which are weak (cf. 1.1.2); in Balto-Slavic, the nom. sg. and acc. sg. of non-neuters never agree except secondarily (cf. Lith. *galvà, gálvą; sūnùs, sū́nų; duktẽ̃, dùkterį*; etc.),[20] and the gen. sg. and dat. sg. disagree everywhere except in *o*-stems (cf. *galvõs, gálvai; sūnaũs, sū́nui*; OLith. *dukterès, dùkteri*). Looming over all else is the fact that the root-accented forms in PIE mobile paradigms (e.g., **mén-ti-s* vs. gen. **mn̥-téi-s*; **dy̯éu-s* vs. gen. **diu̯-és*; **pént-oh₂-s* vs. gen. **pn̥t-h₂-és*) have the normal PIE accent, which would regularly have given a lexical accent (/ˈ/) in Balto-Slavic, while the root-accented forms in BSl. mobile paradigms have the contrasting left-marginal accent (/ˇ/). It is this above all that rules out the possibility of a direct equation of the BSl. bilateral pattern with the PIE amphikinetic type: the PIE initial accent and the BSl. left-marginal accent are not cognate.

4.2.4 *Olander 2009*

For most of Meillet's and Pedersen's successors, the difference between the lexical and left-marginal accents has been an embarrassment, to be explained by *ad hoc* processes or ignored altogether. One of the few scholars for whom the difference is central to his theory of mobility is Thomas Olander, whose 2009 book marks a milestone in the discussion of the problem. Olander's starting point is the fact that in Slavic the recessively accented forms in mobile paradigms are enclinomena, with the properties that have caused them to be labeled "unaccented" in the post-Jakobsonian tradition (cf. 2.2.2). Olander assumes that these forms were unaccented in Proto-Balto-Slavic as well. He takes the creation of BSl. mobility to have been a process by which some forms in oxytone paradigms, but not others, lost their inherited accent and literally became accentless. The mechanism for the accent loss was the "Mobility Law," a rule that Olander presents as follows:

$$\acute{\mu} > [\text{-high}] \; / \; \_ \; C_o\#$$

i.e., a high pitch (= accent) that stood on the last mora of a phonological word was deleted. More complicated than the rule itself are the stipulations Olander lays down for it to operate correctly:[21]

20 In Slavic the segmental merger of the nom. sg. and acc. sg. in most declensions brings about their accentual merger as well.

21 What follows is directly quoted from Olander 2009: 155–6.

> "Accented short vowels (reflexes of PIE **V́*) were realised with high pitch on the only mora: μ́.
>
> "Accented plain long vowels (reflexes of PIE **V̄́*) and long vowels from contraction with a syllable-final laryngeal (reflexes of PIE **Vh́*) were realised with high pitch on the first mora: μ́μ.
>
> "Accented long vowels from final hiatal structures (reflexes of PIE **V́(h)V(h)*) were realised with high pitch on the second mora: μμ́."

The first case covers the de-accenting of forms of the type acc. sg. **suHnún*, whence (in our notation, with x̆ – x . . . = "unaccented") BSl. **sŭ̄nun*, Lith. *sū́nų*. The second case covers the retention of the accent on the second syllable in forms of the type **ǵʰeiméh₂* > BSl. *źeimā̆*, Lith. *žiemà*. The third case covers the de-accenting of forms of the type nom. pl. **golHu̯éh₂es* > BSl. **gălvās*, Lith. *gálvos*.

There are obvious advantages to this approach. Regardless of whether one projects enclinomena of the Slavic sort back to Proto-Balto-Slavic, the difference between the first syllable of a mobile acc. sg. like **sŭ̄nun* (for which Olander writes **ˌsūʔnun*)[22] and the first syllable of an immobile acc. sg. like **vr̥̄nān* (Olander's **ˈu̯āʔrnān*) is an established fact. Olander accounts for the difference on the basis of the only mechanism by which new phonological contrasts normally arise—sound change. Yet a look at how the theory works in detail is disappointing. It is highly unintuitive, for example, that word-final nuclei of the form **-V́-* and **-V́H-* would have come out accented on their first mora (μ́μ), while structures of the form **-V́(H)V(H)-* would have accented their second mora (μμ́); the only basis for this claim is Olander's theory-internal need to accommodate cases like **golHu̯éh₂es* > *gálvos* under his "last-mora" rule. In fact, since underlying **-VV-* sequences were already monosyllabic long vowels in PIE, while the laryngeals in underlying **-VHV-* sequences remained ordinary segmental consonants until well after the inner-BSl. establishment of mobility,[23] the assumption that hiatal structures of the type **-V́V-* and **-V́HV-* would necessarily have been treated identically is quite unjustified. And even with this assumption, there are embarrassing failures of fit, such as the nom. sg. endings **-ís*, **-ús*, and **-ós*, which retain their accent in Lithuanian

22 Olander employs the raised diacritic /ˈ/ to denote the inherited (= lexical) accent and lowered /ˌ/ to denote the secondary initial (= left-marginal) accent that in his view developed redundantly in unaccented words.

23 As shown by the fact that laryngeals were still segmental consonants at the time of Hirt's Law (4.1).

in violation of the purported Mobility Law (cf. Lith. *mintìs, sūnùs, geràs-is*).[24] Finally, like almost every other theory that has been proposed to deal with the problem of mobility, Olander's proposals have nothing convincing to say about the neglected "other" theater of accentual activity in Balto-Slavic—the verb.

4.3 Toward a New Theory

4.3.1 *Verbs*

Verbs are invariably passed over quickly in the literature on the origin of mobility; Olander's treatment (2009: 194–8) is actually generous in allotting them a full five pages (compared with twenty-eight for nouns). Yet the mobility of verbs is in no way "inferior" to that of nouns. The paradigm of a mobile present in Slavic, as established by Stang, was presented in 2.2.3.2:

sg.	1	**vě̋dǫ*	pl.	**vedemь́*
	2	**vedeši̋*		**vedetė̋*
	3	**vedetь́*		**vedǫtь́*

. . . pointing to a Proto-BSl. present

sg.	1	**vědō̲*	pl.	**vedamȧ̀s*
	2	**vedesė̀i*[25]		**vedetė̋*
	3	**vedeti̋*		**vedanti̋*

Mobility has been lost in the finite forms in Lithuanian. It remains, however, in the present participle (nom. sg. masc. *vedą̃s*, acc. *vẽdantį*), where the remarkable nom. pl. masc. form (*vedą̃*) preserves the accent of the lost 3 pl. **vedanti* (see 4.5.1). Formerly mobile presents in Lithuanian, but not immobile presents, retract the accent onto a preverbal particle (*ìš-, nèvedu, nèveda*, etc.), matching the retraction from the left-marginally accented 1 sg. onto a particle by Vasil'ev-Dolobko's Law in Slavic (**ně̋ vedǫ*).[26]

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24 The definite form *geràsis* is generally held to preserve the accent in its original location; in the simplex *gẽras* the accent has been retracted by "Nieminen's Law"; cf. 5.2.1. A detailed survey of the successes and failures of the Mobility Law is given in ch. 5.

25 I choose this reconstruction, more or less arbitrarily, as the BSl. form of the problematic 2 sg. ending. Cf. ch. 3, note 53.

26 Here and below I mostly use the negative particle **ne* as the generic preverbal element, largely for the obvious reason that it can be applied to any verb. It is taken for granted in what follows that the retraction onto a preverb in Lithuanian and the corresponding

It is easy to understand the traditional lack of attention to verbs in the accentological literature. The data are less abundant and less transparent than in nouns. East Baltic has no mobile finite paradigm at all, and the Slavic facts were a hopeless jumble until the work of Stang. But the most important reason for the neglect of verbs is simply the fact that the one reliable generalization that can be made for nouns—that mobility reflects earlier oxytonicity—is obviously not true for verbs. Word equations and other indicators show that the locus of mobility in verbs in BSl. was precisely in stems like **vede/o-* (< **u̯éd^{h}-e/o-*), i.e., full-grade simple thematic presents with stable accent on the root, the so-called PIE "**b^{h}éreti*-type." The final accent in oxytone verbal forms like PSl. **vedetь*/Proto-BSl. **vedeti*, unlike the final accent in mobile nominal forms like **galvā́* or **sūnùs*, could not have been original. The genesis of the overall phenomenon of mobility, therefore, was not simply a matter of retracting or deleting the accent in some ending-accented forms and leaving it intact in others; there must also have been some BSl. process that displaced the inherited root accent *rightwards*. Olander's attempt to trace the **vědō* : **vedeti* pattern to the much less robust PIE thematic type with accent on the thematic vowel (the so-called "*tudáti*-type"), and then to use Dybo's Law to advance the accent within the Slavic period (e.g., **sъpȅtь* 'shakes' > **sъpetь*), is unconvincing.[27]

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retraction in Slavic are "cognate," i.e., that they represent a BSl. phenomenon. The failure of the preverb to lengthen in verbal compounds in standard Lithuanian (*nèveda*, not **nẽ-*) is a function of the morphologized character of the lengthening rule in the modern language (cf. ch. 2, note 8; Rasmussen 1992: 479; Senn 1966: 247), not a sign of the lateness of the retraction. To argue (e.g., with Derksen 1991: 81) that the movement of the accent onto the particle in *nèveda* had to be more recent than the lengthening of **vèda* to *vẽda* is like arguing that the movement of the accent onto the particle in *àtveda* 'bring(s) to' had to be later than the lengthening of the *-a-* in the modern loanword *fãktas* 'fact'.

27 There are three main arguments against this position: 1) the highly salient root-accented thematic type, which included core lexical items, would have been expected to impose its accentuation pattern on the *tudáti*-type, rather than vice versa; 2) a hypothetical *tudáti*-present 3 sg. **supéti* would not have given pre-Dybo's Law Slavic **sъpȅtь*, as claimed by Olander, but would have become Proto-BSl. **sŭpeti* (and PSl. **sъ̆pe-*) by Saussure-Pedersen's Law (see below; Olander, of course, does not accept this argument); and 3) Olander's use of Dybo's Law to generate oxytonicity in trisyllabic mobile forms in Slavic (including nominal forms; see 5.3.1) requires him to find an altogether different explanation for the final accent in trisyllabic mobile forms in Lithuanian, where Dybo's Law never applied. Considerations of economy demand a single rightward advancement process for Baltic and Slavic. See further 6.2.1.1.

4.3.2 *The Structure of a Theory of Mobility*

The preceding discussion has given some inkling of what a historical account of mobility will have to look like. From a purely mechanical point of view, a theory of mobility will have to contain two parts, a "retraction module" and an "advancement module." In nouns, the chief function of the retraction module will be to replace, in some forms only, a lexical accent at or near the right edge of a word by a left-marginal accent (e.g., nom. pl. **golHu̯éh₂es* > **gă̱lvās*). In verbs, the retraction module will replace an inherited initial lexical accent—again, in some forms only—by a left-marginal accent on a preceding particle (e.g., 1 sg. **ne u̯édʰoh₂* > **nè vedō̱*). In both cases, the qualification "in some forms only" lies at the heart of the problem. It is not obvious what the nature of the retraction mechanism was, or why it affected some forms and not others. We do know that it could not have been simple proportional analogy from one paradigm to another, since the left-marginal accent (or zero accent, as Olander prefers to call it) did not exist in mobile paradigms in PIE, and the probability of an all-new phonological contrast arising by proportional analogy is vanishingly small. Therefore, unless we are prepared to allow an analogical process like Kortlandt's syllable-internal version of Pedersen's Law (4.2.3) or its equivalent in other systems,[28] the retraction module will have to contain at least one ordinary sound change.

The advancement module of the theory will have the effect of moving the accent to the right edge of the word in the verbal forms that surface with desinential accent (e.g., 3 sg. **u̯édʰeti* > **vedeti*). It will also account for an essential aspect of noun inflection—the movement of the columnar accent in oxytone *i-, u-, ā-*, and *o*-stems to the final syllable in the "heavy" cases (e.g., loc. pl. **-ísu* > **-iš̍u, *-óisu* > **-aiš̍u*, etc.).[29] The lexical accent on the heavy endings was an organic component of bilateral mobility. Since, as we have seen, it was subject to Hirt's Law (4.1), it must have been in place by the end of the BSl. period.

In the account developed below, which builds on shorter presentations elsewhere,[30] the proposed retraction and advancement modules depend heavily, though not exclusively, on two successively ordered Neogrammarian sound changes that I have called Saussure-Pedersen's Law and Proto-Vasil'ev-Dolobko's Law, respectively. The first rule fed the second: Saussure-Pedersen's

28 Another such case, so far as I can tell, is the "neutralization circumflex" of Dybo 1962: 8—a special intonation peculiar to mobile paradigms that resisted rightward movement by Dybo's Law. Cf. Lehfeldt 2009: 45.

29 I use the term "heavy cases" informally to refer to the loc. pl. in **-su* and the "*m*-cases" of the instr. sg., dat.-instr. du., dat. pl., and instr. pl. See 5.3 for extended discussion.

30 Jasanoff 2008 and Jasanoff 2011.

Law retracted the lexical accent from certain positions in the word and (*inter alia*) generated forms with a left-marginal accent; Proto-Vasil'ev-Dolobko's Law took a subset of the left-marginally accented forms produced by Saussure-Pedersen's Law and gave them a final lexical accent. Both the retraction and advancement modules had to apply very early, since full mobility was already in place at the time of Hirt's Law, which was earlier than the loss of laryngeals and the rise of the acute : non-acute contrast.

4.4 Saussure-Pedersen's Law

4.4.1 *Saussure Revisited*

Saussure was hesitant to label the retraction in Lith. acc. sg. *dùkterį* < "**duktẽrin*" a sound law, citing unnamed "obstacles." Pedersen, as we have seen, agreed, and formulated an analogical interpretation of the process, with shortcomings that have been pointed out above. Alternatives to Pedersen's scenario include the Meillet-Stang inherited mobility thesis, which is hardly more acceptable, and Olander's final-syllable-based sound law, which yields an indifferent fit with the data and fails dramatically with verbs. Against this background, and given the enormous progress that has been made in the study of the BSl. accent since the time of Saussure and Pedersen, it may be worth revisiting the possibility that the retraction in *dùkterį*—we will call it the "*dukter*-retraction"—may have been a Neogrammarian sound change after all.

The word for 'daughter' was mobile in Slavic as well as Lithuanian (cf. BCS *kćî*, gen. *kćȅri* < **dъ̏ćer-*), allowing us to safely set up an acc. sg. **dŭkterin*, with left-marginal accent, for Proto-Balto-Slavic. As a thought experiment, let us now suppose that the change from pre-BSl. **d^{h}ugh$_2$térm̥/*duktȅrin* to BSl. **dŭkterin* was indeed governed by a sound law:

$$*\#C_oVC_o\acute{\check{V}}CV\ldots > *\#C_o\grave{V}C_o\check{V}CV\ldots$$

That is, the PIE (= lexical) accent was retracted from a word-internal short open second syllable, producing a left-marginal accent on the initial syllable. Two preliminary facts can be noted about this rule:

(1) It is typologically natural. By the "Stress-to-Weight Principle," the lighter a syllable is, the more likely it is to undergo de-accentuation and syncope.[31] The obvious parallel in historical Slavic is the de-accenting

31 For the Stress-to-Weight Principle ("if stressed then heavy") and its converse, the Weight-to-Stress Principle ("if heavy then stressed") see Prince 1990. Kuryłowicz (1958: 163 ff.)

of the weak yers (cf. 2.2.3.3). The development of a distinct, retraction-linked accent type—in this case, the left-marginal accent—is likewise entirely plausible. Retraction is a normal mechanism for the creation of new contrastive pitch contours in Balto-Slavic; examples already seen are the Žemaitian rising acute and middle tones (2.1.6), the Slavic neoacute (2.2.3.3), and the Neo-Štokavian shift in BCS, recalling the Vedic *anudātta* (1.2.1). In all these cases, the retracted "new" accent is the rephonologized phonetic anticipation of the old one.

(2) It has the potential to explain more than a handful of consonant-stem forms. Accented medial vowels in open syllables were common in every PIE declension. In the nom. pl., for example, the inherited vowel-stem endings were **-éi̯es* (proterokinetic *i*-stems), **-éu̯es* (proterokinetic *u*-stems), **-éh₂es* (*ā*-stems), and **-ói* (replacing **-ós*; *o*-stems). All but the last of these would regularly have undergone the rule, and precisely these three forms, but not the fourth, show retraction in Lithuanian: *miñtys, sū́nūs, žiẽmos*, with left-marginal accent, as against *dievaĩ*, with accent on the ending.[32] Similarly, in the gen. sg., the *i-, u-*, and *o*-stem endings were **-éis, *-éus*, and **-óh₂ed* (historically the old ablative), respectively, of which only the last would have triggered the rule; the Lithuanian forms are in fact *mintiẽs* and *sunaũs*, but *diẽvo*.[33] Retraction would also have been regular in verbal combinations of the type 1 sg. **ne u̯édʰoh₂* (> *nèvedu, *nẽ vedǫ*).

There was no way that Pedersen, writing in 1933, could have properly appreciated a theory that explained both retraction and the creation of a distinct accent type in a single stroke; the need to recognize a contrast between the lexical and left-marginal accents did not become clear until the discovery of Dybo's Law more than a quarter century later. In this sense, the potential advantages of explaining the *dukter*-retraction by sound change are more

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likewise operates with a phonological retraction from short open syllables, though he uses it not to generate the left marginal accent, but to generate acuteness. As argued in Jasanoff 2015, a rule sensitive to syllable weight also played a decisive role in determining the position of the accent in Proto-Tocharian.

32 So too in Slavic: **gǫ̑stьje* 'guests' (*i*-stem), **sȳnove* (*u*-stem), **zîmy* (*ā*-stem); the *o*-stem form **vôrni* has left-marginal accent by analogy to the other types (cf. 5.2.2.3). Note that even when the form of the ending is unoriginal, as in the case of Lith. nom. pl. *-ūs* (≠ PSl. **-ove* < **-éu̯es*), the accent is in the position to which it would regularly have been retracted by the rule.

33 The Slavic forms, though less transparent, are basically in agreement. For these and the omitted *ā*-stem: gen. sg. see 5.1.3, 5.2.2.1.

evident today than they were when Saussure and Pedersen first pondered the problem.

Continuing our thought experiment, let us now turn to a situation that would have frequently arisen in longer words, where the inherited accent could stand on a word-internal third, fourth or even higher-numbered syllable that met the condition for retraction. If, as we will assume, the left-marginal accent in a form like **dùkterin* was originally an anticipation of the lexical accent that formerly stood on the second syllable, there is no reason not to expect that the same effect would have been produced on the second syllable of a word when the lexical accent stood on the third:

$$*\#C_oVC_oVC_o\acute{\tilde{V}}CV\ldots > *\#C_oVC_o\check{V}C_o\check{V}CV\ldots$$

A "left-marginal" accent—or rather, an accent of the type we have been writing /ˇ/—would thus have come to stand on an interior syllable rather than at the actual left margin of the word. As the actual languages show, of course, there was no such contrastive accent of the "retracted" type in word-internal position; the opposition between the two accents was confined to the beginning of the word in reconstructible Balto-Slavic. We may therefore theorize that the word-internal "left-marginal" accent /ˇ/ was replaced by the lexical accent in word-internal syllables, i.e., that sequences of the type $*\#C_oVC_o\check{V}\ldots$ were converted by sound change to $*\#C_oVC_o\grave{V}\ldots$ The utility of this assumption will be seen in what follows.

4.4.2 *The "Obstacles"*

Our task now must be to see how serious the objections to the hypothetical sound law really are. The palpable reason to look askance at a phonological rule retracting the accent in forms like **duktėrin* is that there are innumerable cases, in both Baltic and Slavic, of medial short open syllables that *are* accented. The overwhelming majority of these are in derived forms in which the accent sits squarely on the prefinal short vowel of a suffix, such as, e.g., the diminutives in **-u̇ka-* (e.g., Lith. *sūnùkas*, PSl. **synъkъ̀* (< **-ъ̇kъ* by Dybo's Law) = R *synók*, gen. *synká*) and the abstracts in **-ȧtā̲* (e.g., Lith. *gyvatà* (< **-ȧtā̲* by Saussure's Law), gen. *-ãtos* 'life', PSl. **slěpotȧ̀* (< **-ȯta* by Dybo's Law) 'blindness').[34] Derived forms like these with medial accent, which can be multiplied almost *ad infinitum*, would seem to put the possibility of a Neogrammarian sound law forever beyond consideration. But we must look beyond appearances. Linguistic

34 The near cognate of Lith. *gyvatà* in Slavic, PSl. **živòtъ* 'life', has the same accentuation (AP b), but is an *o*-stem.

history is full of instances in which a sound or class of sounds is eliminated by one rule or process and restored by another; one has only to recall the textbook case of Grimm's Law in Germanic, where the loss of voiceless stops (**t* > *þ*, etc.) was followed in due course by the creation of new ones (**d* > *t*, etc.). The accented short vowels that appear to violate our rule in Balto-Slavic could in principle be secondary in the same way. A form like Proto-BSl. **sūnùka-* need not have been inherited in the form we find it; the accent could have been positioned on the **-u-* by a phonological process that applied at a time when the *dukter*-retraction was no longer operative.

To lend some substance to these speculations, let us suppose that the oldest relevant ancestor of Proto-BSl. **sūnùka-* was not **suHnúko-* but **suHnukó-*, with final accent. *A priori*, this is not an unreasonable point of departure: the cognate diminutives in *-ka-* are usually oxytone in Vedic (1.6.2), and there is reason to believe, as we will see at greater length in ch. 5, that originally oxytone nominal stems like **suHnú-* productively made oxytone derivatives in early Balto-Slavic. In the declension of the *o*-stem **suHnukó-* there would have been some forms that satisfied the environment for retraction, e.g., the abl. sg. (> gen. sg.) in *-óh₂ed*, and others that did not, e.g., the nom. pl. in **-ōs*.[35] In the first case the development would have been as follows:

quasi-PIE:	**suHnukóh₂ed*
with retraction:	**suHnùkoHa*(*t*)
with word-internal /ˋ/ >/ˈ/:	**suHnùkoHa*(*t*) > **sūnùkā*[36] > Lith. *sūnùko*

where *sūnùko* is in fact the correct Lithuanian form and **synùka* was the pre-Dybo's Law form in Slavic. In the nom. pl., where the accent did not stand on a word-internal short open syllable, there was no retraction:

quasi-PIE:	**suHnukṓs*
(no retraction):	**sūnukṑs*
with **-ài* for **-ṑs*:[37]	**sūnukài* > Lith. **sūnukaĩ*[38]

35 I use the nom. pl., rather than the nom. sg., to illustrate the unretracted treatment because, owing to later developments, neither Lithuanian nor Slavic preserves the final accent of the nom. sg. in its theoretically expected position.

36 With non-application (or rather, analogical undoing) of Hirt's Law, as in the simplex **suHnù-*; cf. 4.1.

37 I.e., substitution of the pronominal for the nominal ending, with transfer of the acuteness of the latter to the former. See 5.2.2.3.

38 With regular de-acuting of diphthongs in final syllables in Lithuanian; cf. 3.4.4.

In this case the phonologically regular output is *not* what we have. The reconstructible BSl. word had columnar accent; the actual Lithuanian form is *sūnùkai* (= pre-Dybo's Law Slavic **synь̀ci*), with the accent in the same position as in gen. sg. *sūnùko*. The replacement of the expected nom. pl. **sūnukà̱i* by the actual form **sūnùkai* was due to leveling. Oxytone nominal stems of more than two syllables, under our rule, would have come out with a peculiar kind of mobility, in which the accent moved between the final syllable (as in nom. pl. **sūnukà̱i*) and the penult (as in gen. sg. **sūnùkā*). Mobility of this "internal" type was not tolerated in Balto-Slavic. It was everywhere eliminated, either by generalizing the retracted accent, as here,[39] or by instituting full bilateral mobility, as discussed in the following section.

The formation and treatment of derived stems will be taken up more fully in 5.6.2–3. For our present purposes, two points are significant: 1) the hypothetical *dukter*-retraction rule encompassed situations where the retracted accent landed on an interior syllable and was realized as a lexical accent; and 2) the interior lexical accents thus generated were a robust phonological source of forms traditionally regarded as "obstacles" to the *dukter*-rule.[40]

4.4.3 *The Rule*

Our sound law can now be stated in fuller form. Out of respect for Saussure and Pedersen, who first recognized the importance of the *dukter*-retraction, I have since 2004 called it **Saussure-Pedersen's Law (SPL):**

> The PIE/pre-BSl. accent was retracted one syllable to the left from a word-internal short open syllable ($\#x_1 \ldots x_n - \grave{x}_{n+1} \ldots > \#x_1 \ldots \grave{x}_n - x_{n+1} \ldots$). In the special case where the syllable that received the accent was word-initial it received a contrastive left-marginal contour ($\#x_1 - \grave{x}_2 \ldots > \#\tilde{x}_1 - x_2 \ldots$).

39 So too in Proto-BSl. **gīvà̱tā*, gen. **gīvà̱tās* > Lith. *gyvatà, -ãtos*; the apparent match of BSl. **-à̱tā* (in derivatives of mobile stems only) with Ved. *-átā* (in all stems; 1.6.2) is thus a false equivalence. Generalization of the retracted accent yielded what would later be classified as a "dominant" suffix in Slavic; see 5.6.3.

40 And indeed, the number of cases where a word-medial accent on an open syllable is original, i.e., provably *not* retracted and generalized like the **-ù-* of Proto-BSl. **sūnùka-*, is vanishingly small. The only superficially plausible-looking counterexample to SPL is the word for "widow" (PSl. **vьdovà* (AP b) < pre-Dybo's Law **vьdòva*), forming a word equation with Ved. *vidhávā* 'id.' The preform is perhaps to be set up as *u̯id^{h}éuh$_2$-eh$_2$*, with a closed second syllable.

SPL, as thus formulated, was the main constituent of the "retraction module" in our emerging theory of mobility. With a single possible exception to be described in 5.1.5, all the left-marginally accented forms in mobile paradigms, both nominal and verbal, arose through the direct or indirect (= analogical) action of this rule.

The immediate effect of SPL on the synchronic grammar of early pre-Balto-Slavic was to create a kind of incipient mobility—we will call it "proto-mobility"—that merits a short discussion in its own right. In nouns and adjectives, proto-mobility was similar to the full bilateral mobility of later Proto-BSl. A native speaker could tell from any declensional form of a nominal stem—or at least a disyllabic nominal stem—whether it belonged to a proto-mobile or immobile paradigm: the case forms of proto-mobile stems, and only of proto-mobile stems, had either a non-contrastive lexical accent on the last syllable of the stem or a contrastive left-marginal accent on the first. One of the early signs of the morphologization of mobility in Balto-Slavic was the spread of the proto-mobile pattern from oxytone disyllabic stems, where it was regularly generated by SPL, to oxytone trisyllabic and longer stems, where it was analogical. To see this process in action, consider the Proto-BSl. adjective **gal̲vinȁ-* ~ **gă̲lvina-* 'pertaining to the head; principal', absent in Baltic but represented in Slavic by the mobile adjective **gôlvьnъ*, fem. **golvьnȁ*.[41] The point of departure was an oxytone derived stem **golHu̯inó-*, standing in the same accentual relationship to its base, oxytone **golHu̯éh₂-*, as **suHnukó-* to **suHnú-* (cf. above). As in the case of **suHnukó-*, SPL produced an alternation between forms that shifted the accent leftwards, e.g., gen. sg. **golHu̯ìnoHat* < **-inóh₂ed*, and others that did not, e.g., nom. pl. **golHu̯inȏs*. But internal mobility of this type, as we have seen, was not permitted. If the "repair" for alternating **golHu̯inò-* ~ **golHu̯ìno-* had been the same as for alternating **suHnukò-* ~ **suHnùko-*, the medial accent would have been generalized, and the result would have been immobile Proto-BSl. **gal̲vìna-*, whence pre-Dybo's Law Slavic **golvʲьnъ*. But speakers took a different tack in the case of the adjectives in **-ino-*, introducing an analogical left-marginal accent from disyllabic stems, where it was phonological. The result was **golHu̯inò-* ~ **gŏlHu̯ino-*, whence Proto-BSl. **gal̲vinȁ-* ~ **gă̲lvina-* and the quasi-attested PSl. **gôlvьnъ*, fem. **golvьnȁ*, etc.[42] Proto-mobility thus ceased to be an exclusive trait of disyllabic stems.

41 Lith. *galvìnis* 'cerebral' is probably an independent formation. Citation of the nom. sg. masc. and nom. sg. fem. of a Slavic adjective is a convention to indicate its accent type—in this case, AP c.

42 Compare the "choice" faced by speakers in the case of mobile stems that were subject to Hirt's Law (4.1). Words of this type inherited a left marginal accent in some forms

The proto-mobility we have been describing was not the same as the canonical mobility of late Proto-Balto-Slavic. In nouns and adjectives the heavy endings were as yet unaccented: the later loc. pl. **mintišù*, **suHnušù*, and **golHu̯aHsù* were represented by **mǹtišu*, **sùHnušu*, and perhaps **gǫ̀lHu̯aHsu* (analogical for phonologically regular **golHu̯àHsu*);[43] the later instr. pl. **mintimȉs*, **suHnumȉs*, and **golHu̯aHmȉs* were represented by **mǹtimīs*, **sùHnumīs*, and perhaps **gǫ̀lHu̯aHmīs*; and so on. There were thus more positions in the paradigm with a left-marginal accent than would be the case later. The canonical final accent that eventually developed in these forms was the work of a later change, the advancement module yet to be discussed.

Proto-mobility in verbs, in the immediate aftermath of SPL, presented a less familiar-looking appearance. In simple thematic presents of the type **u̯ede/o-*, *all* the prefixed forms had a left-marginal accent and were in this sense mobile (**nè* (**tìž-*) *u̯edoH, *nè u̯edesei, *nè u̯edeti*, etc.). The unprefixed forms were immobile, with fixed initial lexical accent (**u̯ėdoH, *u̯ėdesei, *u̯ėdeti*, etc.). On the way to late Proto-Balto-Slavic, two further changes occurred:

(1) as in the heavy case forms of nouns, the left-marginal accent in the majority of the prefixed forms was replaced, for reasons yet to be discussed, by a final accent: **nè u̯edesei* > **ne u̯edesėi, *nè u̯edeti* > **ne u̯edetì*, **nè u̯edonti* > **ne u̯edontì*, etc. (but still **nè u̯edoH*; cf. 4.3.1);

(2) the pattern of the mobile prefixed forms (**nè u̯edoH, *ne u̯edesėi*, **ne u̯edetì,* etc.) was extended to the immobile simplex, leading to the replacement of phonologically regular **u̯ėdoH, *u̯ėdesei, *u̯ėdeti*, etc. by **u̯ědoH, *u̯edesėi, *u̯edeti*, etc.

Other types of present stems were differently affected by SPL, with interestingly different results. Discussion of these will be deferred to ch. 6.

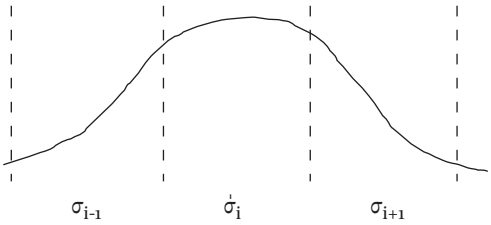
(e.g., **sùHnu-*, **grìHu̯aH-*) and an initial lexical accent in others (**sùHnu-*, **grìHu̯aH-*). Two different ways, as discussed, were found to repair the situation: either the left-marginal accent was maintained, but with full mobility restored (**suHnù-* ~ **sùHnu-*); or the initial lexical accent was maintained but generalized at the expense of the left-marginal accent (**grìHu̯aH-*).

43 SPL would not have applied in the heavy case forms of *ā*-stems, since the stem syllable (**-CaH-*) would have been closed. But since the *i-*, *u-*, and *ā*-stems show a common accentual paradigm in both Baltic and Slavic (5.1, 5.3), it is possible that an analogical loc. pl. **gǫ̀lHu̯aHsu* (+ instr. pl. **gǫ̀lHu̯aHmīs*, etc.) would have developed by this time.

4.4.4 *Phonetics and Phonology of SPL*

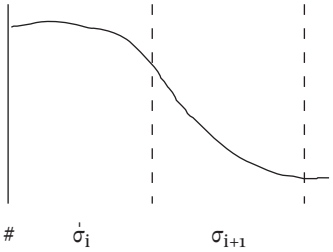
Speculative though any discussion along these lines must be, it may be helpful to think about the above facts in concrete phonetic terms. Let us suppose that at the pre-BSl. stage, prior to SPL, an inherited word-internal lexical accent was realized as a high tone, preceded by an anticipatory rise and followed by a redundant fall:

(1)



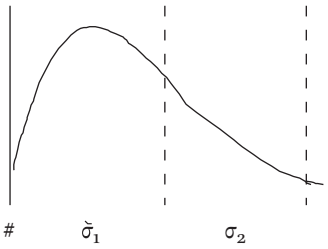
On an initial syllable there would have been no rise:

(2)



When SPL retracted the accent in words where it stood on a short open syllable, the tonal peak was displaced to the left. If the landing site was an interior syllable, the redundant rise and fall had room to move leftwards as well, so that the curve in (1) was eventually replicated one syllable further to the left. But if the landing site was the initial syllable, the rise had nowhere further left to go:

(3)



The resulting contrast between the high tone in (2) and the rising-falling tone in (3) was *in nuce* the contrast we know as the difference between the lexical and left-marginal accents. If the falling contour associated with the left-marginal accent in historical Slavic (cf. BCS acc. sg. *vȍdu*, *glâvu*) accurately reflects the late BSl. situation, the rising-falling contour generated in our scenario would have to have lost its rising component later. It hardly needs to be said, however, that we cannot hope to recover the detailed phonetics of the tones at the pre-BSl. level.

In phonological terms, the neutralization of the /ˈ/ : /ˇ/ contrast in non-initial syllables meant that a Proto-BSl. word could have a lexical accent (/ˈ/) on any syllable, but an accent of the retracted accent type (/ˇ/) only on the first syllable. From the moment the retracted accent came to be restricted to initial syllables, it became phonologically predictable. A (non-clitic) word henceforth had a lexical accent or it did not; if it did not, it received an automatic accent of the retracted type on the first syllable. The retracted accent thus became the familiar Proto-BSl. left-marginal accent, and words headed by a left-marginal accent became, phonologically speaking, underlyingly unaccented. It is interesting to note that accentlessness, under this scenario, came about through the partial phonological merger of the lexical and retracted accents; no syllable actually *lost* its accent or became unaccentable. The picture is thus quite different from the rise of accentlessness as envisaged by Olander (4.2.4); compare 2.2.5 (end).

4.5 Proto-Vasil'ev-Dolobko's Law

4.5.1 *Word Length and Accent Placement*

Most of the forms where SPL overgenerated left-marginal accentuation (i.e., assigned a left-marginal accent to an initial syllable from which it was later removed to the ending) have in common the fact that they are relatively long vis-à-vis other forms in the same paradigm. This is partly true of the end-accented heavy case forms in nouns and adjectives. The correlation of length with final accent is most dramatic, however, in mobile verbs. We have seen how the accent was retracted to the prefix in all the forms of **vede/o*-type presents, only to be relocated later to the ending everywhere except in the "short" 1 sg.:

regular by SPL	after inner-BSl. rightward shift
**nĕ u̯edoH* (1 sg.)	**nĕ u̯edoH* (no change)
**nĕ u̯edesei, -eti, . . . , -onti* (2 sg., etc.)	**ne u̯edesʲei, -etʲi, . . . , -ontʲi*

The connection of rightward movement of the accent to word length is underscored by the retention of the accent on the prefix in the handful of other present-based forms where the prefix + verb complex had only three syllables. Heading the list is the Slavic 2–3 sg. aorist, historically an imperfect (< **u̯éd^{h}es*, **-et*) transplanted into an aorist paradigm of sigmatic origin (accented according to different principles; see 6.6.3):

sg.	1	[**jь̏z-vě̀sь̀* (simplex **vě̀sь̀*)]	pl.	[**jь̏z-vě̀som̀ь̀* (simplex **vě̀som̀ь̀*)]
	2	**jь̏z-vede* (simplex **vě̀de*)		[**jь̏z-vě̀stė̀* (simplex **vě̀stė̀*)]
	3	**jь̏z-vede* (simplex **vě̀de*)		[**jь̏z-vě̀sę̀* (simplex **vě̀sę̀*)]

The retraction of the accent onto the prefix in the 2–3 sg. aorist is still a living process in BCS: cf. *ȉzvede* 'performed', *dȍnese* 'brought', *zȁpeče* 'baked', etc.

The other "short" verbal form that retained the accent on the prefix in Proto-Slavic mobile paradigms was the nom. sg. masc. of the present active participle: PSl. **jь̏z-vedy* (simplex **vě̀dy*) < **u̯éd^{h}ont-s*,[44] contrasting with the oxytonicity of longer forms like nom. sg. fem. **(jьz-)vedǫ́tjь̀*. The initial (< left-marginal) accentuation of the nom. sg. masc. survives in petrified Russian "adverbial participles" of the type *stója* 'standing', *čem ni pópadja* 'with whatever comes to hand', etc. Slavic is in this respect more archaic than Lithuanian, where the corresponding present participles likewise retain mobility, but accent the ending in the nom. sg. masc., as in "normal" nominal stems (*išvedą̃s, vedą̃s*, like *akmuõ, galvà*, etc.). The more interesting participial form in Lithuanian is the nom. pl. masc. *vedą̃*, which is not historically a form of the participle at all, but, as shown by Cowgill (1970), the historical 3 pl. pres. **vedanti*, saved from oblivion by an idiosyncrasy of Baltic syntax.[45] The accentuation of *vedą̃* is thus not that of a historical disyllable, but of an apocopated trisyllable **vedantì*, with the same final accent as in the corresponding 3 pl. in Slavic.[46] Along with the less secure OPr. *gīwu, gīwasi* vs. *giwammai* (2.3.2), the participial nom. pl.

44 So, at least, in OCS. The other languages mostly have a problematic *-a* in these forms, which has been variously explained. Olander (2015: 88–92) gives a full discussion.

45 Namely, the use of participles in lieu of finite verbs in reported speech and various other types of subordinate clauses. Cf. Lith. *sakė, kad* ***nežinąs*** (pres. ptcp., nom. sg.) 'he said that he didn't know' : *sakė, kad* ***nežinę*** (pres. ptcp., nom. pl.) 'they said that they didn't know', where the form patterning synchronically as the nom. pl. of the participle *žinant-* 'knowing' is in fact simply the historical 3 pl indic. **žinant*(*i*) 'they know'. For the usage in modern Lithuanian see Ambrazas 2006: 262–6 and Senn 1966: 369–71.

46 I owe this illuminating observation to Marek Majer. See Majer forthcoming.

in -*ą̃* provides our best evidence for the accentuation of finite verbs in Baltic. That evidence, such as it is, agrees completely with Slavic.

4.5.2 *The Rule and Its Effects*

To all appearances, then, tetrasyllabic sequences like Proto-BSl. 3 sg. **nĕ* (**ĭź-*) *u̯edeti* were converted by a phonological process to oxytone **ne* (**iź-*) *u̯edetı̀*, while trisyllabic **nĕ* (**ĭź-*) *u̯edoH* remained unchanged. Since 2008 I have argued that this process was a sound change which, for reasons to be explained, I have called **Proto-Vasil'ev-Dolobko's Law (Proto-VDL):**

> In phonological words of four or more syllables headed by a left-marginal accent, the final syllable acquired a lexical accent and the left-marginal accent was lost ($\#\grave{x}_1 - x_2 - x_3 \ldots x_n\# > \#x_1 - x_2 - x_3 \ldots \grave{x}_n\#$).

The rule can be seen as the diachronic expression of a requirement that every phonological word of more than three syllables had to have a phonological (= lexical) accent. The historical change was probably a two-stage process. In the first step, all words headed by a left-marginal accent and consisting of more than a single metrical foot received a secondary stress at their right edge, accompanied by a tonal rise. In the second step, the new lesser prominence on the final syllable was reinterpreted as the primary stress in words of four or more syllables. The rephonologization entailed a change in the Proto-BSl. synchronic default accentuation rule: sequences of three or fewer syllables now received a left-marginal accent as before, but unaccented sequences of four or more syllables received a final lexical accent.[47]

The name "Proto-Vasil'ev-Dolobko's Law" was suggested by the fact that a historical sound law of this type, operating at the level of the phonological word in Balto-Slavic, would have been a plausible antecedent to the later, morphologized rule that we know as Vasil'ev-Dolobko's Law (VDL) in Slavic (2.2.2). The most distinctive and least "predictable" feature of VDL is the provision that when a string of *n* syllables beginning with a left-marginal accent, i.e., an enclinomenon, is extended by an enclitic to form a sequence of (usually) *n* + 1 syllables, the left-marginal accent on the first syllable is replaced by a lexical accent on the last. Compare:

47 The case of Proto-VDL provides a nice example of how the rules we write to express a diachronic change—in this case the formula $\#\grave{x}_1 - x_2 - x_3 \ldots x_n\# > \#x_1 - x_2 - x_3 \ldots \grave{x}_n\#$—need not be taken up as synchronic rules in the post-change grammar. Proto-VDL would probably not have figured as an accent *shift* in the grammar of emergent Proto-Balto-Slavic.

VDL (Slavic): **zâvedǫ ~ *zavedǫ lì*; **î za golvy ~ *i za golvy žè*; etc.
Proto-VDL (pre-BSl.): **nĕ u̯edoH ~ *ne u̯edetì ~ *ne u̯edoH gè*

The resemblance of the two rules—the one synchronic and the other a sound change—is unmistakable.

SPL created what we have called "proto-mobility." Proto-VDL—the "advancement module" spoken of earlier—converted proto-mobility into mobility of the full bilateral type. Analogical changes in the wake of Proto-VDL subsequently regularized mobility patterns in the interests of greater learnability. In verbs, bilateral mobility was extended from prefixed to unprefixed forms; in nouns and and adjectives, final accent in the heavy cases was generalized from trisyllabic to disyllabic stems:

regular by Proto-VDL	analogical
3 sg. **nè u̯edeti* > **ne u̯edetì*	**u̯ĕdeti* → **u̯edetì*
dat. pl. **gòlHu̯inomos* > **golHu̯inomòs*	**sùHnumos* → **suHnumòs*

A detailed survey of these developments follows in chs. 5 and 6.

4.5.3 *The Origin of VDL*

As remarked earlier, VDL is unlikely to have just "happened" in Slavic; the fact that a PSl. word was phonologically unaccented did not make it inevitable, or even probable, that an accent would be assigned to a following enclitic. We can now reconstruct a schematic history of the emergence of the fully morphologized version of the rule (cf. 2.4.1):

(1) SPL applied, producing (*inter alia*) prefix + verb complexes with left-marginal accent on the prefix (**ne u̯éd^{h}oh$_{2}$, *ne u̯éd^{h}eti* > **nĕ u̯edoH, *nĕ u̯edeti*, etc.). There was no comparable effect in preposition + noun combinations, which were not univerbated at this stage.

(2) Proto-VDL applied, advancing the left-marginal accent onto the final syllable of phonological words of more than three syllables, including noun/verb + clitic groups (**nĕ u̯edeti* > **ne u̯edetì*; **nĕ u̯edoH ge* > **ne u̯edoH gè*; **dùkterin ge* > **dukterin gè*).

(3) The bilateral mobility pattern was analogically extended from compound to simple verbs (**nĕ u̯edoH* : **ne u̯edetì* ⇒ **u̯ĕdoH* : **u̯edetì*), thereby creating a class of words in which the left-marginal accent appeared to "jump" leftward onto an added particle (**u̯ĕdoH* : **nĕ u̯edoH*, **ǐž-u̯edoH*, etc.).

(4) The synchronic patterns thus established in mobile verbs (pre-Sl. **ne + vèdō̲ > *nè vedō̲, *ne + vèdō̲ + ge > *ne vedō̲ gė̀*, etc.) were generalized to other sequences involving preposed elements, including preposition + noun groups (**nō + źèimān → *nȏ̀ źeimān* (= PSl. **nâ zimǫ*, R *ná zimu*), **nō + źèimān + ge → *nō źeimān gė̀*, etc.).[48]

By this time, all connection to word length and syllable count had been lost. Steps (1), (2), and (3) were events of the BSl. period, but step (4), which effectively created the category of enclinomena in their canonical form, was purely Slavic. This is probably why we find traces of the left-marginal accent moving onto postpositions in Baltic, as in the secondary cases (2.4.1), but no hint of any corresponding movement onto prepositions.

One of the idiosyncrasies of VDL is the fact that an enclitic "trumps" a proclitic when both are present. We thus find PSl. **nâ zimǫ* with a proclitic and **zimǫ žė̀* with an enclitic, but **na zimǫ žė̀* in the presence of a proclitic *and* an enclitic. The opposite treatment, ***nâ zimǫ že*, which would have been equally possible *a priori*, does not occur. The reason why **na zimǫ žė̀* and not ***nâ zimǫ že* is the correct output is a function of the order of application of the two sound changes. SPL was the earlier rule, and Proto-VDL applied to the outputs of SPL. Just as the model for the leftward movement of the accent in prepositional phrases like **nâ zimǫ < *na + zîmǫ* came from verbal combinations of the type **nè u̯edoH < *ne u̯éd^{h}oh$_{2}$*, so in groups of the type **na zimǫ žė̀ < *na + zîmǫ + že* the model came from combinations of the type **ne u̯éd^{h}oh$_{2}$ ge*, where SPL first caused retraction (**nè u̯edoH ge*) and Proto-VDL converted the retracted sequence to pre-Proto-BSl. **ne u̯edoH gė̀*. The Slavic rules simply generalize the pattern proper to phrases where the core enclinomenon was a verb.

Proto-VDL is thus doubly explanatory. On the one hand, by furnishing a mechanism for the rightward movement of the accent in mobile paradigms, it performs the function it was designed for. But by unexpectedly shedding light on the origin of a synchronic rule often taken for granted, it does considerably more.

48 In other words, the boundaries of the phonological word were extended, perhaps in several stages, to include larger units—prepositional phrases, phrases consisting of negative particle plus noun, coordinating conjunction plus non-verbal major constituent, etc.

CHAPTER 5

Mobility in Nominal Forms

We now have a schematic theory of mobility that meets the formal requirements for what a historical explanation of mobility should do. The theory uses SPL to generate (proto-)mobility and the left-marginal accent, and Proto-VDL to assign a final accent to "long" forms in mobile paradigms. Our developing claim is that these two rules, supplemented by Hirt's Law, a small number of later phonological changes, and various analogical developments were responsible for the mobility phenomena we know from the daughter languages. Selected examples scattered through ch. 4 have shown how SPL and Proto-VDL work in ideal cases—how, e.g., late PIE **ne u̯éd^{h}eti* became **nĕ u̯edeti* and then PSl. **ne vedetь*. It is time now to move from selected examples to a more systematic review of the data. This chapter will do that for nouns and, more cursorily, pronouns, going over the individual inflected forms to check the accentological facts against the predictions of our rules. Ch. 6 will do the same for verbs.

5.1 *ā*-, *i*-, and *u*-stems: The Light Cases

5.1.1 *The Common Curve*

Putting aside *o*-stems and neuters, which for different reasons have to be discussed separately, mobile nouns of the major declensions—*ā*-, *i*-, and *u*-stems—have a common accentual paradigm, with nearly identical reflexes in the two branches. Animate consonant stems, to the extent evidence is available, conform to the same pattern. Before the operation of Hirt's Law, which introduced complications in the *ā*-stems, the shared accentual curve would have looked as follows (forms of Lith. *širdìs* (3) 'heart' are provided for reference):[1]

1 The vocative, where limited material combined with the potential interference of discourse factors make serious reconstruction impractical, is omitted.

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	sg.		pl.		du.	
nom.	x . . x́	(*širdìs*)	x̌ . . x	(*šìrdys*)	x̌ . . x	(*šìrdi*)
gen.	x . . x́	(*širdiẽs*)	x . . x́	(*širdžių̃*)	[? . . ?][2]	
dat.	x̌ . . x	(dial. *šìrdie*)	x . . x́	(*širdìms*)	x . . x́	(*širdìm*)
acc.	x̌ . . x	(*šìrdį*)	x̌ . . x	(*šìrdis*)	x̌ . . x	(= nom.)
[instr.	? . . ?	(*širdimì* ≠ *gálva*)][3]	x . . x́	(*širdimìs*)	x . . x́	(*širdim̃*)
loc.	x . . x́	(*širdyjè*)	x . . x́	(*širdysè*)	[? . . ?][2]	

The accentual near-identity of mobile *ā*-, *i*-, *u*-, and consonant stems has an important practical consequence for the problem of reconstructing the history of the individual forms. If all four forms in a given case/number slot have, e.g., a left-marginal accent, the probability is high, especially given the considerable structural differences between the *ā*-stem endings on the one hand and the *i*-, *u*-, and consonant-stem endings on the other, that one or more forms are analogical. Other things being equal, the less we need to explain by analogy and the more we can account for with independently motivated sound laws, the simpler and more persuasive our theory. But it is neither necessary nor realistic to look for a purely phonological account of the position of the accent in each individual form.

In ch. 4 we met the distinction between "light" and "heavy" cases, the latter being forms—chiefly the *m*-cases (dat.-instr. du., dat. pl.; in most declensions also instr. sg. and pl.) and the loc. pl. in **-su*—where the accent in mobile paradigms sits (or formerly sat) to the right of its original location on the suffixal syllable. We will see in what follows that the gen. pl. in **-oHom* belongs here as well. The heavy cases have a two-step history, involving, first, retraction by SPL and then rightward advancement by Proto-VDL. They will therefore best be discussed after the light cases, where the operation or non-operation of SPL was the only relevant variable. For ease of presentation our survey will begin with the light cases of *ā*-, *i*-, *u*-, and animate consonant stems, which form a homogeneous group, and then move to the light cases of the masculine *o*-stems, which differ in important details from the other declensions. We will then be in a position to discuss the heavy cases of all the major types together.

In the displays that follow, quasi-PIE **golHu̯éh₂-*, **mn̥tí-*, and **suHnú-* will serve as representative *ā*-, *i*-, and *u*-stems. Forms of the consonant-stem **dʰugh₂t(é)r-* will be brought in as needed. *i*-stem forms in Slavic are supplied by **kostь* (f.) 'bone' and occasionally **gostь* (m.) 'guest'.

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2 There is insufficient material to allow a meaningful reconstruction of the accentual properties of the gen. and loc. du. at the Balto-Slavic level. The South Slavic evidence points to x . . x́.

3 For the instr. sg., which presents assorted difficulties, see 5.3.7.

5.1.2 *Nominative Singular* (*x . . ẋ*)

PIE		post-SPL		Proto-BSl.		Lith.			Proto-Sl.
**golHu̯éh₂*	>	**golHu̯ȧH*[4]	>	**galvā́*	>	*galvà*	||	>	**golvȁ*
**mn̥tís*	>	**mn̥tis*[5]	>	**mintȉs*	>	*mintìs*	||	→	**kȍstъ*
**suHnús*	>	**suHnȕs*	>	**sūnȕs*[6]	>	*sūnùs*	||	→	**sŷnъ*

None of the PIE forms were affected by SPL, which had no effect on final syllables (see, however, 5.1.5). Consonant stems accent the ending as well (PIE **dʰugh₂tḗr* > Proto-BSl. **duktḗ* > Lith. *duktẽ*, PSl. **dъćí*). In Slavic, the expected forms would have been pre-Stang-Ivšić's Law **kostȉъ, *synȉъ*, which would have given ***kòstъ, **sŷnъ*, with neoacute. The actual forms **kȍstъ, *sŷnъ* are the segmentally identical historical accusatives—a substitution also found in the *o*-stems (5.2.1).

The Lithuanian *i*- and *u*-stem stem forms are an embarrassment for Olander's Mobility Law (4.2.4), which correctly accounts for Proto-BSl. **galvā́* and **duktḗ*, but predicts (in our notation) **mĩntis* (> Lith. ***miñtis*) and **sū́nus* (> Lith. ***sū́nus*) for correct **mintis* and **sūnȕs*. Olander attributes the final accent of Lith. *mintìs* and *sūnùs* to analogy with the *ā*-, *ē*-, and consonant stems (167).[7]

5.1.3 *Genitive Singular* (*x . . ẋ*)

PIE		post-SPL		Proto-BSl.		Lith.			Proto-Sl.
**golHu̯éh₂es*	>	**gõlHu̯aHas*	→	**galvā́s*	>	*galvõs*	||	>	**golvy̏*
**mn̥téis*	>	**mn̥tèis*	>	**mintèis*	>	*mintiẽs*	||	>	**kostȉ*
**suHnéus*	>	**suHnèus*	>	**sūnèus*	>	*sūnaũs*	||	>	**synȕ*(?)

In the *ā*-stems the theoretically expected PIE ending would have been **-éh₂s*, but both Greek (*agathẽs*) and Lithuanian point to a laryngeal hiatus, suggesting that **-éh₂s* was replaced by **-éh₂es* in the protolanguage. PIE **-éh₂es* would

4 As in the similar displays in Olander 2009: 166–94, ">" means "became by sound change" and "→" means "became by non-phonological process."

5 Set up with **-n̥-* because syllabic resonants must still have been in place at the time of Hirt's Law (cf. **pi̯lna-* < **pi̯lna-* < **pi̯lH-no-* < **pl̥i̯H-no-* < **pl̥hᵢ-nó-*), which postdated the rise of mobility.

6 With overriding of Hirt's Law, as explained in 4.1.

7 All references to "Olander" in the following sections, unless otherwise noted, are to Olander 2009.

have been subject to SPL, yielding a left-marginal accent in Balto-Slavic; a possible, but very uncertain trace of this has been claimed in OPr. gen. sg. *ālgas* (: Lith. *algà* 'wage').[8] The normal *ā*-stem forms, both in Lithuanian and Slavic, have final accent, presumably under the influence of the *i*-, *u*-, and consonant stems (cf. Lith. *dukteřs* < **-rès*).[9] These are regularly accented on the ending in Lithuanian; in Slavic the accented *i*-stem ending is well attested in Old Russian and survives in the numeral forms R *pjatí* '5', *desjatí* '10', etc.[10] For the uncertain testimony of the *u*-stems in Slavic cf. Dybo 1981: 28.

The Mobility Law fares poorly with these forms, all of which should have come out with a left-marginal accent. Overriding the evidence of the circumflex in Lith. *galvõs*, Olander sets up the *ā*-stem ending as *-éh₂s*, which would have resisted retraction; he makes this the analogical model for Lith. *mintiẽs* and *sūnaũs* and offers ad hoc arguments for the ending-accented Old Russian forms (172).

5.1.4 *Dative Singular* (*x̌ . . x*)

PIE		post-SPL		Proto-BSl.		Lith.			Proto-Sl.
**golHu̯éh₂ei*	>	**gòlHu̯aHai*	>	**gà̰lvāi*	>	*gálvai*	||	>	**gôlvě*
**mn̥téi̯ei*	>	**mǹ̥teı̯ei*	>	**mìntei*	>	*miñtie*[11]	||	>	**kȍsti*
**suHnéu̯ei*	>	**sùHneu̯ei*	>	**sṵ̄navei*		[sū̀nui]	||	>	**sŷnovi*

SPL operated regularly in the *ā*-, *i*-, and *u*-stems. In the *ā*-stems, the original Slavic accentuation was mostly replaced by **golvě̋* (= R *golové*, etc.) under the influence of the locative, but survives in Old Russian and Štokavian BCS (*glâvi*). The left-marginal accent of the *i*-stem form is what would have been expected from **-éi̯ei*; following SPL, this acquired, at least in Baltic, a shorter variant **-ei* (> Lith. *-ie*), which is usually taken to be haplological.[12] In the *u*-stems, Baltic has lost the inherited form, but PSl. **sŷnovi* shows the regular retraction. The expected consonant-stem form would have had final accent (< **duktréi*);

8 See Stang 1966: 198.

9 On the assumption that pre-Lith. **dukterès* directly continues the desinential accent of the PIE preform in **-trés*.

10 The root accent of modern R *kósti* and BCS *kȍsti* is standardly attributed to the influence of the homophonous dative.

11 Dialectal (Žemaitian and elsewhere); standard Lithuanian has fem. *-(i)ai*, with the *ā*-stem ending, and masc. *-(i)ui*, with the *o*-stem ending. There is also an OLith. variant *-i*.

12 According to Hock 1995: 79, the unshortened form of the ending (**-ei̯ei*) was the source (via contracted **-ī*) of OLith. *-i*.

OLith. *dùkteri* must therefore either be analogical to the other types or go back to a proximate preform **duktér(ei̯)ei* (*vel sim.*), with generalization of the stem-form **duktér-*.

Olander's system obtains the *i*-stem forms by having the Mobility Law apply to already haplologized **-ei* < **-ei̯ei*; the *ā*-stem forms are regular with the stipulation that structures of the type **-V́hV(h)-* accented the second mora in Balto-Slavic (cf. 4.2.4). In the *u*-stems Olander ponders deriving the Russian adverbs *domój* (= Ukr. *domív*) 'home(wards)' and *dolój* (= Ukr. *dolív*) 'down with' from PSl. **synovi̍*, with **-ovi̍* < **-ȯvi* by Dybo's Law. But these forms are too obscure to shed any light on the Proto-BSl. situation, as Olander's own discussion makes clear.[13]

5.1.5 *Accusative Singular* (*x̌ . . x*)

PIE		post-SPL		Proto-BSl.		Lith.			Proto-Sl.
**golHu̯ā́m*[14]	>	**golHu̯ā̍n*	→	**gā̱lvā̱n*	→	*gálvą*[15]	||	>	**gôlvǫ*
**mn̥tím*	>	**mn̥ti̍n*	→	**mn̆tin*	>	*miñtį*	||	>	**kȍstь*
**suHnúm*	>	**suHnu̍n*	→	**sū̱̆nun*	>	*sū́nų*	||	>	**sŷnъ*

Here for the first time, none of the three forms is correctly generated by SPL, and the *o*-stem form (Lith. *var̃ną*, PSl. **vôrnъ* < **vărnan*) is "wrong" as well.[16] Only the consonant-stem acc. sg. Lith. *dùkterį*, PSl. **dъ̏ćerь* (< **dŭkterin* < **-tér-*), Saussure's *Musterbeispiel*, continues the corresponding IE preform in an obvious way. To explain the left-marginal accent of the other forms, we can choose from among several possible scenarios:

(1) The vowel stems acquired their left-marginal accent analogically from the consonant stems. Given the closeness of the fit thus far between the output of SPL and the position of the accent in vowel stems, this option is unattractive. It is important to recall, however, that analogy from consonant stems to vowel stems was Saussure's and Pedersen's explanation of mobility in general, and until recently was the only realistic alternative to assuming inherited mobility in vowel stems *à la* Meillet and Stang.

13 Cf. Olander 174, especially note 42 and the references there cited.

14 < **-éh₂m* by Stang's Law; cf. Gk. *agorā́n*, and see ch. 3, note 47.

15 With analogical non-acute *-ą*.

16 Taking this word, for convention's sake, as an example of an old oxytone; but cf. ch. 3, note 12.

(2) The vowel stems took their left-marginal accent not only from the consonant stems, but also from the *ā*-stems, where monosyllabic **-ām* was recomposed as disyllabic **-eh₂m̥* or **-aHm̥* prior to SPL. Disyllabic accented **-éh₂m̥*/**-ȧHm̥* would then have been subject to SPL, giving Proto-BSl. **gă̱lvān*.[17] The assumption of a disyllabic ending in these forms—a move also contemplated by Olander (169)—would go some distance toward making the across-the-board left-marginal accent of the acc. sg. intelligible.

(3) The retraction of the accent from final **-V̌N* sequences was phonologically regular. This would mean, in effect, positing a sound change of "final **-V̌N*(*C*) retraction":

$$\text{*}\ldots C_oVC_o\acute{V}N(C)\# \;\Rightarrow\; \text{*}\ldots C_o\check{V}C_o\check{V}N(C)\#$$

The effect of final **-V̌N*(*C*) retraction would have been to take quasi-PIE **mn̥tím*, **suHnúm*, and **u̯ornóm* to **mĭntin*, **sŭ̱nun*, and **vărnan*, respectively. A seemingly ad hoc rule of this type would ordinarily be a costly expedient, especially since the facts to be accounted for are deeply embedded morphologically and thus potentially explainable by analogy. In the present case, however, a phonological retraction from final **-V̌N*(*C*) is independently motivated by the left-marginal accent of the acc. pl. (5.1.8) and the nom.-acc. sg. of neuter *o*-stems (type PSl. **sŏ̱to*, ultimately < **ḱm̥tóm* '100'; 5.4.1.2), where analogy with the acc. sg. of *ā*-stems or consonant stems is out of the question. The rule is not inherently strange. Final **-V̌N*(*C*) retraction would make good phonetic sense in a language like Japanese, where post- but non-prevocalic nasals, traditionally described as "syllabic," have a range of values that include nasal prolongation of the preceding vowel (e.g., *hon* [hoõ] 'book') and a nasalized high unrounded back vowel (e.g., *kon'yaku* [koɯ̃jakɯ] 'betrothal').[18] To the extent a speaker-hearer could parse pre-BSl. **mn̥tím* in appropriate speech settings as [mn̥tí(i̯)ĩ], [mn̥tí(i̯)N̥],[19] or the like, the phonetic

17 The non-acuteness of the final syllable (**-ān*) would in this case be regular. But the loss of acuteness could easily be analogical, since no other acc. sg. ending is acute in Balto-Slavic (cf. 3.4.3).

18 For the phonetic facts in Japanese, see Yoshida 1993, especially p. 534. Whether the syllabic nasal should be described as moraic rather than syllabic at the phonological level, as some analyses maintain, is immaterial for our purposes here.

19 I.e., with a non-contrastive syllabic nasal, taking its place features from the following consonant.

condition for SPL would have been met, and the result would have been phonologically regular **mìntin*.

It is this last option that will be favored here. The validity of final **-V̆N(C)* retraction will be assumed in what follows, not as a wholly new rule, but as a special case of SPL. There are no counterexamples.[20] With retraction from final **-V̆N(C)* groups understood to be implicit in SPL, the *i-*, *u-*, *o-*, and consonant stem acc. sg. forms would all be phonologically regular (**mìntin*, **sū̆nun*, **vãrnan*, **dùkterin*), and only the *ā*-stem form (**gãlvān*) would require appeal to analogy.[21]

Most of these forms are unproblematic for Olander's Mobility Law, which de-accents all short final syllables and generates the *i-*, *u-* and *o*-stem forms directly. Indeed, the Mobility Law is displayed to best advantage in the acc. sg.—the flip side of its failure to generate the correct forms in the nom. sg. (Proto-BSl. **mintìs*, **sūnùs*, not predicted ***mìntis*, ***sū̆nus*) and gen. sg. (Proto-BSl. **mintèis*, **sūnèus*, **dukterès*, not predicted ***mìnteis*, ***sū̆neus*, ***dùkteres*).

5.1.6 *Locative Singular* (*x . . x́*)[22]

PIE		post-SPL		Proto-BSl.		Lith.			Proto-Sl.
**golHu̯éh₂i*	>	**golHu̯áHi̯*	>	**gãlvãi̯*	→	*galvojè*	||	>	**golvě̀*
**mn̥téi*	>	**mn̥tḗi*	>	**mintḗi*	→	*mintyjè*	||	>	**kostì*
**suHnéu*	>	**suHnḗu*	>	**sūnḗu*	→	*sūnujè*	||	>	**synù*

All three principal forms (the consonant stems have nothing to contribute in this case) are correctly predicted at the BSl. level. In the *ā*-stems the failure of the accent to retract reflects the fact that syllable-final sequences of the form **-VHi/u-* were realized as **-VHi̯/u̯-* in Balto-Slavic, thus blocking SPL (cf. 4.1, with note 3). The regular Lithuanian form *galvojè* shows the addition of the

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20 The accented gen. pl. ending, of course, was **-óHom*, not **-óm*. On supposed PSl. **jãzъ* 'I' < **jazъ̀* < PIE **eǵʰóm* see 5.5.2 below. The Slavic *n*-stem nom. sg. in **-(m)ę́*, which *can* bear the accent, is on independent grounds here taken from **-(m)ēn*, not **-(m)en*.

21 In other words, the schema for the acc. sg. can be rewritten as follows:

PIE		post-SPL		Proto-BSl.		Lith.			Proto-Sl.
**golHu̯ā́m*	>	**golHu̯ã́n*	→	**gãlvān*	>	*gálvą*	||	>	**gôlvǫ.*
**mn̥tím*	>	**mǹ̥tin*	>	**mìntin*	>	*miñtį*	||	>	**kȍsti.*
**suHnúm*	>	**sùHnun*	>	**sū̆nun*	>	*sū̃nų*	||	>	**sŷnъ.*

22 Consideration of the instr. sg. will be postponed to 5.3.7, following discussion of the heavy cases.

pseudo-postposition **ēn*, abstracted from the *o*-stems, to the inherited form in **-āi*, which survives in the adessive (e.g., dial. *galváip* 'at the head'; cf. 2.4.1). *mintyjè* and *sūnujè* are based on *galvojè*; for older and dialectal *i*- and *u*-stem forms, none of which affect the accentological picture, see Olander 2015: 171–4. The oxytonicity of the *ā*-, *i*-, and *u*-stem loc. sg. is unproblematic in Olander's system as well.

5.1.7 *Nominative Plural* (*x̌ . . x*)

PIE		post-SPL		Proto-BSl.		Lith.			Proto-Sl.
**golHu̯éh₂es*	>	**gòlHu̯aHas*	>	**gā̱lvās*	>	*gálvos*	||	>	**gôlvy*
**mn̥téi̯es*	>	**mǹ̥tei̯es*	>	**mìntii̯es*	>	*miñtys*	||	>	**gȍstьje*[23]
**suHnéu̯es*	>	**sùHneu̯es*	>	**sū̱̀naves*	>	*sū́naus*[24]	||	>	**sŷnove*

The Proto-BSl. forms are all regular by SPL, as is the consonant-stem form **dùkteres* < **-téres* (OLith. *dùkteres*). After the establishment of the left-marginal accent, some of the endings were remodeled, creating superficial mismatches of accent and form. Thus, the standard Lithuanian *u*-stem form is *sū́nūs*, retaining its "correct" accentuation but remade so as to stand in the same segmental relationship to acc. pl. *sū́nus* (< **-ū̱ns*) as *i*-stem nom. pl. *miñtys* < **-éi̯es* to acc. pl. *mintìs* (< **-ī̱ns*). In Slavic, where there is disagreement over whether the *i*-stem ending **-éi̯es* regularly gave **-ьje* (masc.) or **-i* (fem.), both genders have the left-marginal accent proper to **-éi̯es*.

Olander's treatment of these forms is unsatisfactory. The *ā*-stem form (Proto-BSl. **gā̱lvās*), conforms to the Mobility Law, but only by virtue of the **-V́hV*(*h*)- > **-VhV́*(*h*)- rule. The *i*-, *u*-, and consonant-stem forms are not predicted at all. *Pace* Kortlandt (1975: 42), tentatively followed by Olander (182), there is no justification for assuming preforms in **-íHes* and **-úHes*, which would have satisfied the condition for the Mobility Law (under the **-V́hV*(*h*)- > **-VhV́*(*h*)- convention) but had no other reason to be incorporated into the paradigm of proterokinetic *i*- and *u*-stems. Surveying the standard reconstructions **-éh₂es*, **-éi̯es*, **-éu̯es*, and **-éRes*, all of which yielded a left-marginal accent in Balto-Slavic, it is hard to overlook the correlation between the shared accentual treatment of these endings and their common **-éCes* structure. Olander's account misses this generalization.

23 But fem. **kȍsti*, which some hold to be the phonologically regular treatment; see ch. 6, note 61.

24 Dialectal for standard *-ūs*; cf. Stang 1966: 216.

5.1.8 *Accusative Plural* (*x̆ . . x*)

PIE		post-SPL		Proto-BSl.		Lith.			Proto-Sl.
**golHu̯ás*[25]	>	**golHu̯ā̆s*	→	**gā̲lvā̲s*	>	*gálvas*	||	→	**gôlvy*
**mn̥tíns*	>	**mĭ̯tins*	→	**mìntī̲ns*	>	*mintìs*[26]	||	>	**kȍsti*
**suHnúns*	>	**sùHnuns*	→	**sū̆nū̲ns*	>	*sū́nus*	||	>	**sŷny*

The segmental reconstruction of the acc. pl. endings presents problems of detail. In theory, the PIE acc. pl., at least in vowel stems, was formed by adding **-s* to the acc. sg. The expected endings should thus have been **-ā́ms* < **-éh₂ms* (*ā*-stems), **-íms* (*i*-stems), **-úms* (*u*-stems), and, in the *o*-stems, **-óms*. Already in the parent language, however, **-ms* became **-ns* except in the *ā*-stems, where the *-m-* was lost between the long vowel and **-s*, giving **-ā́s*.[27] In the *o*-stems there was a tendency, triggered by the nom. pl. in **-ōs*, for **-ons* to become **-ōns*, with a long vowel (cf. Ved. *vīrā́n* 'heroes', Old Irish *firu* 'men' < **-ōns*,[28] and Lith. *výrus* 'husbands' < **-ō̲ns*). Since the **-ō-* in these forms was not subject to Osthoff's Law in Celtic or Balto-Slavic, it must have been a relatively late intrusion (or re-insertion) in these languages. Pre-BSl. **-ō̲ns* in turn became the basis for the creation of **-ī̲ns* and **-ū̲ns* in the *i-* and *u*-stems; reciprocally, the nasal consonant "invaded" the *ā*-stem ending **-ā́s* in many dialects, including Slavic (**-ę* in soft stems, e.g., **dûšę* 'souls') and standard Lithuanian (cf. definite adjective acc. pl. fem. *geràsias*; cf. 2.1.2). It is not easy to be sure what variants were present at any given moment in the individual branches.[29]

None of these questions has any bearing on the actual accentual facts. All acc. pl. forms have a left-marginal accent, which can be attributed to final

25 Cf. ch. 3, note 7, and the discussion in 3.4.3.

26 Final accent by Saussure's Law; contrast *šìrdis*.

27 For the loss of *-m-* after the long vowel, cf. acc. pl. **gᵘ́ōs* (= Ved. *gā́ḥ*) from ***gᵘ́ōms* (: **gᵘóu̯-* 'cow'; Mayrhofer 1986: 163). In the *i-*, *u-*, and *o*-stems, the endings **-ims*, **-ums*, and **-oms* are notable for the non-application of Szemerényi's Law, which ought to have converted historical **-V̌ms* to **-V̄m* (cf. PIE nom. sg. **dʰégʰōm* 'earth' < **-om-s*). The underlying structures may have been maintained or restored under the influence of consonant stems, where sequences of the form **-C-n̥s* would not have been subject to the rule. Kim 2013 gives a different view.

28 Or conceivably < **-ōs*, analogical to the *ā*-stem acc. pl. in **-ās*. The interesting point in Old Irish is that pronouns, where the nom. pl. ended in **-oi*, not **-ōs*, retain *-a* < **-ŏns* in the acc. pl. (cf. *inna firu* 'the men').

29 For Lithuanian, see the discussion of the relevant forms in Stang 1966: 181–219, esp. 200. It is minimally clear that some dialects never had **-n-* in the *ā*-stems.

-V̌N(C)* retraction in the *i-*, *u-* and *o*-stems,[30] to "normal" SPL in consonant stems (duktérn̥s* > **dùkterins*),[31] and to analogy with the other types in the *ā*-stems. In Olander's system, the *i-*, *u-*, and *o*-stem forms are regular by the Mobility Law, while the consonant- and *ā*-stem forms are analogical.

5.1.9 *Nominative-accusative Dual* (*x̌ . . x*)

PIE		post-SPL		Proto-BSl.		Lith.		Proto-Sl.
**golHu̯éh₂ih₁*	>	**gŏlHu̯aHiH*	>	**gā̆lvai*[32]	→	*gálvi*	|| >	**gôlvě*
**mn̥tíh₁*	>	**mn̥tiH*	→	**mǐntī*	>	*minti*[33]	|| >	**kŏsti*
**suHnúh₁*	>	**suHnuH*	→	**sŭ̆nū*	>	*sū́nu*	|| >	**sŷny*

The basic form of the animate nom.-acc. du. ending was **-h₁e*, seen in consonant-stem forms like Gk. (*dúo*) *patére*, and apocopated to **-h₁* in *i-*, *u-*, and *o*-stems.[34] In *ā*-stems, as in neuters, the ending was **-ih₁*. All the actual forms have left-marginal accent in Balto-Slavic, a fact inseparable from the universal root accentuation of the animate nom. pl. and acc. pl. Only the *ā*-stem ending is phonologically regular by SPL; the other forms are analogical to the *ā*-stems and to the plural. A further sign of the "homogenization" of the nom.-acc. du. is the secondary acuteness of the ending in Lith. *gálvi* (for expected **-ie*), a transfer from the *i-*, *u-*, and *o*-stems.

The Mobility Law gives the same results in this case. The *ā*-stem form **gā̆lvai* follows from **-éh₂ih₁*, although Olander assumes acute **-ai* for Balto-Slavic. The other forms are analogical.

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30 Assuming the rule to have applied before the replacement of **-ins*, **-uns*, **-ons* by their long-vowel counterparts. If we wanted not to invoke **-V̌N(C)* retraction, we would have to invoke analogy with the consonant stems and/or general *Systemzwang*. The argument in the latter case—not particularly compelling—would be that since the acc. sg. was barytone even when the corresponding nom. sg. was oxytone, the acc. pl. could hardly *not* be barytone in the presence of a nom. pl. that was barytone itself.

31 At least under the assumption that the acc. pl. was "strong" at the time of SPL, as in Greek (*thugatéras*), rather than "weak," as in Vedic (*duhitŕ̥ḥ*).

32 With final non-acute **-ai*, as shown by the outcome in Slavic (cf. 2.2.6, with note 58). Note the difference in treatment between the *ā*-stem loc. sg. in **-éh₂i*, where syllable-final **-i* became non-syllabic and the result was **-āi* (5.1.6), and the dual ending **-éh₂ih₁*, where the **-i-* was not syllable-final and the ending was treated as disyllabic. Otherwise Olander 180.

33 Final accent by Saussure's Law; contrast *šìrdi*.

34 For an attempted formulation of one part of the apocope rule, see Jasanoff 2003: 59–62.

5.2 Masculine *o*-stems: The Light Cases

The accentual paradigm of masculine *o*-stems presents enough special features to justify a case-by-case discussion of the more interesting forms. Beginning with the light cases, we can distinguish between 1) *o*-stem forms that conform to the normal (i.e., *ā*-, *i*-, *u*-stem) curve, either regularly or by analogy, and 2) forms that depart from the normal curve.

5.2.1 *Forms Conforming to the Normal Curve*

The majority of mobile *o*-stem forms are accented the same way as the corresponding forms of other stem types. In some cases this is phonologically regular; in others it is analogical. Three light case forms are both phonologically regular and conform to the curve:

(1) The nom. sg., reconstructible as Proto-BSl. **varnȁs* (< PIE **-ós*) and matching nom. sg. **galvā̀*, **mintìs*, and **sūnùs*. Neither Baltic nor Slavic preserves the final accent directly. In Lithuanian, the accent is retracted from final **-às* by a late rule known as Nieminen's Law, whence *vařnas*; the original place of the accent is seen in the contracted ending of stems in **-i̯o-* (e.g., *arklỹs* < **-i̯às* 'horse') and in the long form of adjectives (*geràs-is*).[35] Olander, for whom *vařnas* would have been the unique example of a nom. sg. in **-s* with phonologically regular retraction by the Mobility Law, tries unsuccessfully to explain away *arklỹs* (105) and *geràs-is* (167). In Slavic, the phonologically regular segmental treatment of Proto-BSl. **-as* is controversial; **-ъ*, **-o*, and **-ə* have all been proposed.[36] The forms in the modern Slavic languages go back to proximate preforms of the type **vôrnъ*; accentually, this is probably just the acc. sg. form, as in the *i*- and *u*-stems (but see 5.4.1.3).

35 Cf. Nieminen 1922: 151 ff. Nieminen, followed by Stang (1966: 186), took the retraction to be phonological after heavy syllables and analogical after light ones.

36 The most recent discussion of the perennial problem of the treatment of PIE **-os* in Slavic is Olander 2015: 103 f. The default assumption here will be that PSl. **-ъ* was regular after normal ("hard") consonants, but that **-e* was regular after **-j-*, where the treatment seen in the adverbially employed nom.-acc. nt. forms of comparative adjectives (OCS *bolje* 'more', *vyše* 'higher', etc. < PIE **-i̯os*; cf. Lat. *melius* 'better', etc.) is unlikely to be analogical. The "soft" ending **-ь* in nouns (e.g. *nožь* 'knife') is probably therefore a replacement for phonologically correct **-e*, and the Old Novgorod ending *-e* in hard stems (e.g., *brate* 'brother', *Ivane*), whatever its origin, must somehow have replaced **-ъ*. Olander takes both *-ъ* and Novgorod *-e* from a common prototype **-ə*.

(2) The acc. sg. (Lith. *vařnạ*, PSl. **vôrnъ* < Proto-BSl. **vărnan* < **-óm*), with the left-marginal accent common to all acc. sg. forms and explainable by final **-V̌N(C)* retraction.

(3) The acc. pl. (Lith. *varnùs* (with Saussure's Law; contrast *kélmus* (3) 'stumps'), PSl. **vôrny* < Proto-BSl. **vărnō̲ns* for older **-ons* < **-óns*), likewise regular by final **-V̌N(C)* retraction.

Two other light case forms are not phonologically regular, but conform to the pattern of the other declensions and can be considered analogical accommodations to the common curve:

(1) The dat. sg. (Lith. *vařnui*, PSl. **vôrnu* < Proto-BSl. **vărnō̲i*).[37] Since PIE **-ṓi* would not have been subject to SPL, final accent would have been expected (Proto-BSl. ***varnṓ̲i*). But all other vowel stems had phonologically regular left-marginal accent in the dat. sg., and the *o*-stems were assimilated to the pattern.

(2) The nom.-acc. du. (Lith. *varnù* (by Saussure's Law; contrast *kélmu*), PSl. **vôrna* < Proto-BSl. **vărnō̲*). Here too final accent would have been expected (***varnṓ̲* < **-óh₁*); quasi-attested **vărnō̲* follows the *ā*-, *i*-, and *u*-stems, all but the first of which are themselves analogical.

5.2.2 *Forms Not Conforming to the Normal Curve*

The most interesting *o*-stem forms are those that depart from the normal curve and therefore cannot be analogical. Here belong the gen. sg., loc. sg., and nom. pl. Significantly, all are phonologically regular.

5.2.2.1 *o-stem Genitive Singular* (*x̌ . . x*)

The *o*-stem gen. sg. continues the PIE thematic ablative in **-e/o- + *-h₂ed*; the laryngeal is virtually guaranteed by the *a*-color of the contraction product in Baltic (Lith. *-o* < **-ā*), as well as by the trimoric vowel in Germanic (Go. *galeiko*; cf. 1.5.1) and the Avestan spelling *-āaṯ*.[38] In an oxytone *o*-stem the pre-

37 With regular acute; see 3.4.4. Olander (2009: 173) sets up the PIE ending with uncontracted **-oei*, partly on the strength of the circumflex in the corresponding Greek ending (*agathôi*). But this is a red herring: word-final acute **-ói* is phonotactically impossible in Greek.

38 Olander (2009: 170) is too quick to dismiss the orthographic testimony of Avestan, where the written and oral traditions of the language are frequently out of alignment. It is true

form would have been **u̯ornóh₂ed* (*vel sim.*), whence pre-BSl. **u̯ŏrnoHa(t)* and Proto-BSl. **vărnā* by SPL. Both Lithuanian (*vařno*) and Slavic (**vôrna*) agree on this accentuation, which differs from that of the gen. sg. in the other declensions (5.1.3) and must be original. For different reasons (the **-ÝhV(h)- > *-VhÝ(h)-* convention), retraction is regular in Olander's system as well.

5.2.2.2 o-*stem Locative Singular* (*x̀ . . x*)

In the *o*-stem loc. sg. the PIE ending was disyllabic **-oï* (cf. 1.3.3), which in an oxytone stem would have yielded left-marginal accent by SPL (**vărnai* < **u̯ornóï*). This accentuation is found in Slavic (**vôrně*). In Lithuanian the situation is more complicated. In standard Lithuanian, where the expected ending *-ie* is replaced by *-e* < **-e̯* < **-ēn* (*varnè, kélme*), locative adverbs of the type *namiẽ* 'at home' are oxytone, as are, frequently, the inflected forms of the locative in dialects that continue to use the inherited ending *-ie*. But the pattern is not consistent; initial accent is found in other adverbs based on mobile stems (e.g., *vãkarie* 'yesterday') and in other dialects.[39] From an internal BSl. point of view, both patterns can easily be motivated analogically: the initial accent in Slavic agrees with all the other case endings in the singular of the *o*-stem paradigm, while the final accent in Lithuanian, in those forms and dialects where it occurs, agrees with the accentuation of the loc. sg. in the other declensions (cf. *galvojè*, *mintyjè*, etc.).

The picture is further complicated—but in the end clarified—by the productive locatives in *-e* < **-ēn*. Underlying this ending is a form of the preposition/postposition **en*, which also appears, according to a common view, in the consonant-stem loc. sg. in Slavic (cf. OCS *kamene* 'stone', *nebese* 'heaven', etc. < **-en*) and, further afield, in Italic (e.g., Umbr. *onse* (*o*-stem) 'shoulder', *manuve* (*u*-stem) 'hand') and PIE itself (e.g., **dʰǵʰm-én* 'on the earth').[40] The long vowel and acuteness of pre-Lith. **-ēn* have never been satisfactorily explained. A contraction of **-oi̯-en* to **-ēn* is phonologically out of the question. More plausible is Būga's suggestion (*apud* Stang 1966: 183) that **-en* was added to the

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that, as Hoffmann and Forssman say (2004: 71), the sequence *-āaṯ* is never scanned disyllabically in the Gathas. But the same authors go out of their way to point out (*ibid.*) that the PIE forerunner of this ending was "schleiftonig" (circumflex) and originally disyllabic. Their discussion hints at the possibility that the circumflex character of the ending was part of the reason why in *-āaṯ* "the second mora of the long vowel *ā* (~ *aa*) was [exceptionally—JJ] pronounced with an expiratory accent: *aá*." No explicit historical account is given.

39 See the discussion in Stang 1966: 182–3, 298–99.

40 From **dʰǵʰm-én* was built the masculine *n*-stem Lat. *homo*, Go. *guma*, etc. 'man', literally 'earthling'; see Nussbaum 1986: 187 ff.

already monophthongized ending *-ę̄ < *-*oi*, but even here the acuteness of the combination remains unaccounted for. Both length and acuteness find a simple explanation if pre-Lith. *-*ēn* is taken as the contraction product of the postposition **en* with the PIE bare stem form in *-*e* or *-*o*, the *de facto* "endingless locative" of the thematic declension.[41] The new long vowel, being of PIE or just post-PIE date, would have been marked for acuteness in Balto-Slavic. Moreover, since contracted **u̯ornḗn* would not have been subject to SPL/final *-*V̆N*(*C*) retraction, we can theorize that the "*n*-locative" (BSl. **varnē̍n*, lost in Slavic) was the locus of oxytonicity in the *o*-stem loc. sg., while the "*i*-locative" (BSl. **vărnai* < *-*òï*) was the locus of the left-marginal accent. The Lithuanian oxytone *i*-locative, as seen in *namiẽ*, etc., is an accentual contamination of the two types.[42]

The loc. sg. in *-*ēn* provides a welcome further example of a simple long vowel yielding a BSl. acute in a final syllable (cf. 3.4.3). In Lithuanian, the sequence *-*ēn* became the mark of the locative *par excellence* and proceeded to spread, first in the singular (**galvā́i* → *galvojè*, **mintḗi* → *mintyjè*, etc.), and then in the plural as well (*varnuosù* → *varnuosè*, *galvosù* → *galvosè*, etc.).

5.2.2.3 o-*stem Nominative Plural* (*x . . ẋ*)

The third and final *o*-stem form that departs from the normal curve is the nom. pl.[43] The PIE ending in *o*-stem nouns was *-*ōs* (i.e., *-*o-es*), which in many IE languages, including the whole BSl. branch, was replaced by the pronominal ending *-*oi*. PIE *-*oi*, in the view taken here, was the source of the following endings in the historical BSl. languages: 1) Slavic *-*i* in nouns, pronouns, and adjectives (e.g., **vôrni*); 2) Lith. *-*i*, *-*ie* < *-*ę̄* in pronouns and adjectives (e.g., *pilnì*, definite form *pilníe-ji* 'full'; 3) Lith. *-*ai* in nouns (*varnaĩ*), and 4) *-*i* and *-*ai* in Latvian and Old Prussian, respectively. This position is not universally shared. A venerable alternative view, originated by Johannes Schmidt and still widely diffused in various forms, denies the etymological identity of the Lithuanian nominal and pronominal endings, taking the one from PIE *-*oi* and the other from a neuter collective in *-*eh₂* extended by *-*i* (*vel sim.*).[44] One of

41 Such forms are presupposed by adverbials of the type Ved. *mukhatáḥ* 'from the mouth', *madhyatáḥ* 'from the middle', etc., and Gk. *ouránothen* 'from heaven' (≅ Lat. *caelitus* 'id.'), *ouránothi* 'in heaven', etc. As Alan Nussbaum points out, the endingless form is directly attested in Gk. *tễle* 'afar' beside *tēlóthi* 'id.' and *tēlóthen* 'from afar'.

42 As is the non-standard barytone *n*-locative, found as early as Daukša (cf. *dárbe* 'at work' beside *darbè*; Stang 1966: 298).

43 Putting aside the instr. sg. and pl., which will be discussed separately. The account that follows replicates the argument of Jasanoff 2016.

44 Both possible etymological pairings—the first taking *-*ę̄* from the plural and *-*ai* from the collective, and the second taking *-*ai* from the plural and *-*ę̄* from the collective—have

the arguments for separating Lith. *-ę̄ from -*ai* is the intonational difference between the two, the former being acute and the latter non-acute. But this difference, as we have seen, is a mirage: acute diphthongs in final syllables lost their acuteness in Lithuanian without triggering Saussure's Law (3.4.4). From a purely intonational point of view, there is no reason why nominal -*ai* and pronominal *-ę̄ could not both go back to a Proto-BSl. *-*ai*.

Merely to mention this possibility, of course, is to raise two further questions: why should PIE *-*oi* have come out marked for acuteness at all, and how could it have had distinct segmental outcomes in nouns and pronouns/adjectives? The first point has been addressed in passing above (2.2.6, 3.4.4). The acuteness of Proto-BSl. *-*ai* was taken over from the ending it replaced in nouns, namely, PIE *-*ōs*, with a long vowel that would regularly have received acute marking in Balto-Slavic. At a time when the nom. pl. of *o*-stem nouns still ended in *-*ōs* and the nom. pl. of pronouns ended in *-*ai*, speakers of Proto-Balto-Slavic identified the *o*-stem nom. pl. with acuteness and extended this feature from nouns to pronouns. Later, the pronominal ending *-*ai*, now acute, replaced *-*ōs* in nouns. We have seen cases of this type of "transferred acuteness" before, e.g., in the Lithuanian 1 sg. athematic ending *-*mę̄* (OLith. reflexive -*míe-s*), with acuteness taken from the thematic ending *-*ō* < *-*o-h*$_2$ (3.4.4), and in the *ā*-stem nom.-acc. du. in *-*ę̄* < *-*ai* < *-*eh*$_2$*-ih*$_1$ (*gálvi*, etc.), with acuteness taken from the other stem classes (5.1.9).

The twofold segmental treatment of *-*ai* is a purely Lithuanian phenomenon; there is nothing comparable in the other Baltic languages or Slavic. The phonologically regular treatment of the diphthong *-*ai*- in final syllables, both acute and non-acute, was clearly *-ę̄-. But the development from diphthong to monophthong would not have been an instantaneous event. The change can plausibly be supposed to have begun with the fronting of the first element of the diphthong to *-*e*-, thus causing *-*ai*- to merge with inherited *-*ei*-. It was at this transitional stage, I suggest, that the double reflex of the nom. pl. in *-*ai* had its origin. In the immediate aftermath of the **ai* > **ei* change the plural paradigm of a noun and a pronoun would have looked as follows (accent is ignored):

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their defenders. Stang (1966: 66) calls the relationship between -*ai* and *-ę̄ "perhaps the most discussed problem of Lithuanian historical morphology." The literature is surveyed by Hock (2005: 17).

	noun	pronoun
nom.	**varnei*	**tei*
gen.	**varnōn*	**tōn* or **teisōn*[45]
dat.	**varnamus*	**teimus*[46]
acc.	**varnō(n)s*	**tō(n)s*
instr.	**varnais* (< **-ǒis*)[47]	**tais* (< **-ǒis*)
loc.	**varnō(n)su*	**tō(n)su*

We can now pose the problem of the nominal ending *-ai* as a question: why did nom. pl. **varnei*, with regularly fronted **-ei* < **-ai*, get *remade* to **varnai*, undoing the fronting rule? The answer must be analogy. Nouns of the type E. Balt. **varnas* were descriptively *a*-stems, with **-a-* in key positions in the paradigm (**-amus, *-ais*; also nom. sg. **-as*, acc. sg. **-an*, dat.-instr. du. **-amV*). There would thus have been pressure to restore **-ai* for **-ei* in the nom. pl. Pronouns also had **-a-* in many forms. But in pronouns these were mostly proper to the singular (cf. Lith. *tàs, tãm*(*ui*)*, tą̃, tamè*), while the fronted diphthong **-ei-* occurred in the nom. pl., the dat. pl. (**teimus*), perhaps the gen. pl. (**teisōn*), and the dat.-instr. du. (cf. Lith. *tíemdviem*). My suggestion is thus that **-ei* was replaced by **-ai* in nouns (**varnei* → *varnai*) but not in pronouns, where it was "supported" by the **-e-* of other plural and dual forms in the pronominal paradigm. **-ē* was the phonological reflex of Proto-BSl. **-ai*; **-ai* (later regularly deacuted to *-ai*) was the analogical reflex.

As for the somewhat anticlimactic question of whether Lith. *varnaĩ* or PSl. **vôrni* reflects the Proto-BSl. position of the accent, the Lithuanian form is obviously older. The nom. pl. in *-aĩ*, accentually speaking, is phonologically regular and synchronically anomalous, a *lectio difficilior*; all the other declensions have left-marginal accent in the nom. pl. In Slavic, by contrast, the left-marginal accent of **vôrni* is synchronically predictable and could easily have replaced earlier **vornь*. Olander, whose system predicts retraction from PIE

45 The pronominal ending **-oisoHom*, which survives in Slavic (cf. OCS gen. pl. *těxъ*) and (with **-ei-* for **-oi-*) Old Prussian (*stēison* 'istorum'), may still have been on hand at the relevant early date in East Baltic.

46 Cf. Lith. *tìems*, Latv. *tiẽm*.

47 The Proto-BSl. product of the Osthoff's Law shortening of **-ōis* was evidently distinct from the normal sequence **-ais*, which would have given **-ę̄s* in pre-Leskien's Law Lithuanian and **-i₂* in Slavic (cf. OCS 2, 3 sg. impv. *vedi* < **-ais*, **-ait*). Since the *o*-stem instr. pl. ends in (regularly de-acuted) *-ais*, *-aĩs* in Lithuanian and **-y*, presumably via **-ūs* < **-uis*, in Slavic, I conjecture **-ǒis* for the BSl. prototype.

**-ói*, incorrectly opts for **vàrnai* as the Proto-BSl. form. Citing the general obscurity of the problem, he declines to discuss Lith. *varnaĩ* (181).

5.2.3 *Summary: The Masculine* o*-stem Curve* (*Light Cases*)

We can end our discussion of the *o*-stem light cases with an overview of their treatment:

case	PIE		post-SPL		Proto-BSl.		Lith.			Proto-Sl.
nom. sg.	**u̯ornós*	>	**u̯ornȯs*	>	**varnȧs*	>	*vaȓnas*	||	→	**vôrnъ*
gen. sg.	**u̯ornóh₂ed*	>	**u̯ȍrnoHat*	>	**vàrnā*	>	*vaȓno*	||	>	**vôrna*
dat. sg.	**u̯ornṓi*	>	**u̯ornȱi*	→	**vàrnō̱i*	>	*vaȓnui*	||	>	**vôrnu*
acc. sg.	**u̯ornóm*	>	**u̯ȍrnon*[48]	>	**vàrnan*	>	*vaȓną*	||	>	**vôrnъ*
loc. sg. I	**u̯ornóï*	>	**u̯ȍrnoi*	>	**vàrnai*	>	*vaȓnie*[49]	||	>	**vôrně*
loc. sg. II	**u̯ornḗn*	>	**u̯ornḗn*	>	**varnḗ̱n*	>	*varnè*	||		[lost]
nom. pl.	**u̯ornṓs*	>	**u̯ornȱs*	→	**varnȧ̱i*	>	*varnaĩ*	||	→	**vôrni*
acc. pl.	**u̯ornóns*	>	**u̯ȍrnons*[48]	→	**vàrnō(n)s*	>	*varnùs*[50]	||	>	**vôrny*
nom-acc. du.	**u̯ornóh₁*	>	**u̯ornȯH*	→	**vàrnō̱*	>	*varnù*[51]	||	>	**vôrna*

5.3 The Heavy Cases

In addition to the case forms surveyed thus far, which either retain the accent in its inherited position at the Balto-Slavic level (e.g., the nom. sg. in all declensions, the gen. sg. in all declensions except *o*-stems) or project it backward (e.g., the acc. sg. and dat. sg.), there are those that appear to move it rightwards. Here belong the *m*-cases and the loc. pl.—the "heavy" cases as informally defined in 4.3.2—as well as the gen. pl., which on inspection can be seen to fall under this description as well. As we shall see, the forms discussed below—the gen. pl., the dat. pl., the instr. pl., the loc. pl., and the dat.-instr. du.—have very similar histories.

5.3.1 *Proto-VDL in nouns*

Traditional attempts to deal with oxytonicity in the heavy cases either take it to be an analogical extension of inherited mobility or attempt to explain it by sound law. The inherited mobility approach builds on the uncontroversial fact

48 By final **-V̌N(C)* retraction.

49 Dialectal.

50 But *kélmus*.

51 But *kélmu*.

that PIE root nouns of the **dḭeu̯-/*diu̯-* type had accented endings in all the weak cases, both heavy and light—a pattern that tended in Indo-Iranian and Greek to spread to root nouns of the fixed-accent **pod-/*ped-* type (cf. Ved. gen. sg. *padáḥ* (but *góḥ*), Gk. gen. sg. *podós*, etc.; cf. 1.2.2, 1.3.4). Some scholars further posit accented heavy case endings in suffixed consonant stems (e.g., hysterokinetic **ph₂tr̥-sú, *-bhís*, amphikinetic **pn̥th₂-sú, *-bhís*, etc.). But this assumption, while defensible for a pre-stage of PIE, is not well-founded for the late protolanguage; both Vedic and Greek have columnar predesinential accent in words of this type (Ved. *pitr̥ṣu, pitr̥bhiḥ*; *pathíṣu, pathíbhiḥ*; Gk. *patrási*). The yet more extreme position that *i-, u-*, and even *ā*-stems had accented heavy endings in late PIE, as assumed by Stang and, latterly, Kortlandt (2009: 77), is wholly lacking in positive support. In the end, the only non-ad hoc, non-stipulative way to explain the accented heavy case endings on the basis of inherited PIE mobility—if this is the path we choose to take—is to assume that they spread from mobile root nouns to mobile consonant stems, and from mobile consonant stems to mobile nouns as a whole. This would be, in effect, a special case of the standard Pedersen's Law explanation of mobility, and it would be open to the same objections.[52]

Olander, in keeping with his rejection of Pedersen's consonant-stem-centered approach to mobility, prefers a phonological approach. For Lithuanian he assumes rightward movement by Saussure's Law (e.g., *mintimìs* < **-ìmi̯s*, etc.), and for Slavic rightward movement by Dybo's Law (**kostьmì* < **-ь́mi*, **kostьxъ́* < **-ь́xъ*). A technical problem with this scenario in Baltic is that the original Lithuanian loc. pl. in **-su*, which survives dialectally and is not acute, also attracts the accent (type *mintisù*).[53] But the more fundamental objection to Olander's Saussure's Law/Dybo's Law approach is that it separates Baltic from Slavic and makes full bipolar mobility, in verbs as well as in the heavy

52 Mobile root nouns certainly existed in Balto-Slavic (see 3.4.5); some, no doubt, had accented endings in the heavy cases. But far from supplying a model for mobility in other stem types, root nouns must have *followed* the pattern of longer stems. Note the petrified neuter dual PSl. **ȍči* < **ǫ̀či* 'eyes' < PIE **h₃ékṷ-ih₁*, with analogical left-marginal accent; the phonologically correct form would have been **očì*, with Dybo's Law advancement of the expected lexical accent.

53 The byforms in *-ýsu* and *-ysù* cited by Olander (193) are, as he notes, based on the *ā*-stem endings *-ósu* and *-osù*, where the former shows the regular operation of Hirt's Law (**-ȧ́Hsu* < **-aHsù*) and the latter shows Hirt's Law analogically undone to conform to the pattern of the other declensions. See 5.3.5 below.

case forms of nouns,[54] an accidental consequence of two notoriously late and unrelated Lithuanian and Slavic sound changes.

A better phonological tool than Saussure's Law and Dybo's Law, and one that can be applied at the Balto-Slavic level, is Proto-VDL (4.5). We can begin with the gen. pl., where Proto-VDL would have generated the correct forms in all the major declensions except *o*-stems:

PIE		post-SPL		post-Proto-VDL		Proto-BSl.		Lith.			Proto-Sl.
**golHu̯éh₂oHom*	>	**gòlHu̯aHoHon*	>	**golHu̯aHoHòn*	>	**gal̲vō̍n*	>	*galvų̃*	||	>	**golvъ̨*[55]
**mn̥téi̯oHom*	>	**mǹ̥tei̯oHon*	>	**mintii̯oHòn*	>	**mintii̯ō̍n*	>	*minčių̃*	||	>	**kostьjъ̨*
**suHnéu̯oHom*	>	**sùHneu̯oHon*	>	**suHnou̯oHòn*	>	**sū̲novō̍n*	>	[*sūnų̃*]	||	>	**synovъ̨*
**u̯ornóHom*	>	**u̯òrnoHon*	=	**u̯òrnoHon*	→	**varnō̍n*	>	*varnų̃*	||	>	**vornъ̨*

Note the two-step process: first, SPL generated a left-marginal accent, as in any retracted form; then, the resulting "unaccented" tetrasyllabic sequences received a lexical accent on their final syllable. In the *o*-stems, where the gen. pl. had only three syllables, the rightward advancement was analogical. In consonant stems of the type **dukter-*, Proto-VDL would have been phonologically regular if the full-grade suffix **-ter-* was generalized early enough to generate an environment for Proto-VDL (**dùkteroHon* > **dukteroHòn* > OLith. *dukterų̃*, pre-Sl. **dъćerъ̨*); otherwise it would have to have been analogical as well (**dùktroHon* → **duktroHòn* → **dukteroHòn*).

In the other heavy cases the generalization of oxytonicity involved a more serious analogical component. Here the relevant post-SPL forms of ordinary disyllabic stems had three, not four syllables (e.g., dat. pl. **mǹ̥timos* < **mn̥tímos*; **sùHnumos* < **suHnúmos*; **u̯òrnomos* < **u̯ornómos*; **gòlHu̯aHmos* < **golHu̯éh₂mos* (with left-marginal accent by analogy to the other stem types)), and Proto-VDL would not have been operative. But it is important to recall at this point that not all mobile stems were disyllabic. Derived nominal stems typically contained an extra syllable; this was true, e.g., of the extremely numerous and productive mobile adjectives in **-ino-* (fem. **-inā-*) discussed in 4.4.3. In the period of proto-mobility—i.e., in the period between SPL and Proto-VDL—the plural declension of an adjective like **golHu̯ino-* 'principal' would have looked as follows:

54 In mobile verbs, Olander (194–7) invokes Dybo's Law to explain the accented primary endings (PSl. **vedetь̀, *vedǫtь̀*, etc.; 2.2.3.2).

55 The notation "-ъ̨" (which I also use after soft consonants, for more accurate "-ь̨") is explained in 5.3.2.

nom. pl.	**golHu̯inṓs*	(compare disyllabic stem **u̯ornṓs*)[56]
gen. pl.	**gòlHu̯inoHon*	(" " " **u̯ŏrnoHon*)
dat. pl.	**gòlHu̯inomos*	(" " " **u̯ŏrnomos*)
acc. pl.	**gòlHu̯inons*	(" " " **u̯ŏrnons*)
instr. pl.	**golHu̯inṓis*	(" " " **u̯ornṓis*)
loc. pl.	**gòlHu̯inoišu*	(" " " **u̯ŏrnoišu*)[57]

The gen. pl., dat. pl., and loc. pl. of the long stem **golHu̯ino-*, but not of the short stem **u̯orno-*, were tetrasyllabic, and as such, would have been subject to Proto-VDL. The accent in these three forms accordingly shifted to the right edge of the word: gen. pl. **golHu̯inoHòn*, dat. pl. **golHu̯inomȯs*, loc. pl. **golHu̯inoišù̯*. The indirect cases of the plural—genitive, dative, instrumental, and locative—would now all have been accented on the ending in long stems, but not in short stems, where the dative (**u̯ŏrnomos*) and locative (**u̯ŏrnoišu*) would have retained their left-marginal accent. In the ensuing analogical competition, the model of the shorter, non-derived stems might have been expected, *a priori*, to prevail. In the event, however, the simple rule that the indirect cases received a final accent, as was the case in long stems, trumped the harder-to-learn pattern in short stems, where the genitive and instrumental, but not the dative and locative, were end-accented. The plural curve for *o*-stems thus became

nom. pl.	x . . x́	(Proto-BSl. **varnȧ̲i*, **ga̲lvinȧ̲i*)
gen. pl.	x . . x́	(" " **varnṓn*, **ga̲lvinṓn*)
dat. pl.	x . . x́	(" " **varnamȧs*, **ga̲lvinamȧs*)
acc. pl.	x̌ . . x	(" " **vărnō(n)s*, **gă̲lvinō(n)s*)
instr. pl.	x . . x́	(" " **varnṓi̯s*, **ga̲lvinṓi̯s*)
loc. pl.	x . . x́	(" " **varnaišù̯*, **ga̲lvinaišù̯*)

From the *o*-stems the pattern spread to the other declensions. And here, where both the dat. pl. and the instr. pl. had an *m*-ending, subsequent learners could mistakenly abstract the principle—thus far only correct in the plural (and in the dat. instr. dual in **-mV́*)—that *m*-endings in mobile stems, regardless of where they occurred in the paradigm, always bore the accent. Oxytonicity thus came also to be regularized in the instr. sg. of those declensions where the ending was **-mi* (**mintimì*, **sū̲numì*, **dukter(i)mì*).

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56 With the original nom. pl. ending **-ōs*, whence later **-ō̲s* → **-a̲i*.

57 Inherited **u̯ornóišu* would not have satisfied the environment for SPL; the retraction would have been analogical to the corresponding *i*- and *u*-stem forms.

The establishment of final accent in the heavy cases was thus a partly phonological, partly analogical affair. In the beginning, all the forms in question received a left-marginal accent, either by SPL proper (e.g., dat. pl. **u̯ornómos* > **u̯ȍrnomos*, **mn̥tímos* > **mǹ̥timos*) or by analogy to such forms (e.g., dat. pl. **golHu̯éh₂mos* → **gȍlHu̯aHmos*, **golHu̯inómos* → **gȍlHu̯inomos*).[58] Proto-VDL then applied in words of four or more syllables, but not in words of three or fewer. Especially in *o*-stems, this meant that the heavy cases had final accent more often than other forms, and with the morphologization of Proto-VDL, the tendency became a rule.[59]

The heavy case forms can now be examined individually.

5.3.2 *Genitive Plural* (*x . . x́*)

The *i*-, *u*-, and *ā*-stem forms of the gen. pl. are all, as we have seen, accentually regular. The two-step account presented above, with SPL generating sequences of the type **gȍlHu̯aHoHon*, **mǹ̥teu̯oHon*, etc. and these then undergoing Proto-VDL, depends crucially on the reconstruction of the ending as **-oHom* rather than **-om*. The two endings, superficial appearances notwithstanding, had quite different outcomes in Slavic. Both yielded an ordinary-looking back yer (-ъ) in OCS and other early Slavic dialects (*glavъ, synovъ*, etc.). But unlike normal final reduced vowels, the -ъ of the gen. pl. induced an unusual metatony in BCS, Slovenian, and Czech. In nouns of AP a, the simplest case, the metatony took the form of an acute accent (long rising) becoming a circumflex

58 In **gȍlHu̯aHmos*—and in all the *m*-cases of *ā*-stems—the retraction had to be analogical for the same reason as in **u̯ȍrnoišu* (see preceding note): the originally accented syllable was not short and open and hence did not provide a phonological environment for SPL. Technically speaking, of course, *all* left-marginally accented forms in trisyllabic stems like **golHu̯ino-* were analogical, since, as previously discussed (4.4.3), the phonologically correct outcome of SPL would have been the "internal" mobility (**golHu̯inò-* ~ **golHu̯ino-*) that was nowhere preserved.

59 As typically in analogical change, the particular patterns and subpatterns that speakers identified and generalized were not the only possible choices they could have made. In some mobile stems, depending on their length and declension type, all the heavy case endings, but not the light ones, would regularly have been accented; in others the heavy cases as well as the light ones would have had left-marginal accent; in yet others (e.g., stems of four or more syllables) Proto-VDL would have generated a final accent in the light as well as the heavy cases. New speakers had to make sense of the variety they encountered, and there was more than one way this could be done. Our task is to find a plausible account of speakers' choices that comports with the data, not to prove that their particular choices were inevitable.

(long falling): cf. BCS (Čakavian) *krȃva* 'cow', gen. pl. *krâv*[*ā*]; Slov. *kráva*, gen. pl. *krâv*; and Cz. *kráva*, gen. pl. *krav*—all pointing to an immediately preceding **kőrva*, gen. pl. **kôrvъ*.[60] The explanation for this phenomenon, along with related effects in AP b and AP c, was seen by Stang (1957: 96), who recognized that the "neocircumflex" in gen. pl. **kôrvъ* must somehow reflect the originally greater length of the ending. According to the specific scenario proposed in Jasanoff 2014, Proto-BSl. non-acute **-ōn* (< **-oHom*) first gave **-ūn* in Slavic, parallel to the change of non-acute **-ō* to **-ū* in the nom. sg. of *n*-stems (cf. *kamy* : Lith. *akmuõ*). This **-ūn*, like other final **-V̄n* sequences (cf. **-ān* > **-ǫ*, **-ēn* > **-ę*), retained its nasality, eventually giving a *nasalized* yer **-ъ̨*. The inherently greater length of the nasalized reduced vowel was interpreted by speakers as a minute falling-pitch prolongation of the preceding syllable, causing the rising contour of the acute to be reanalyzed as a circumflex. The common reconstruction of the gen. pl. ending as "**-ə̄*" captures the same insight into the source of the metatony, but fails to clarify how a phonetically longer reduced vowel would have patterned in the Proto-Slavic phonological system.

5.3.3 *Dative Plural* (*x . . ẋ*)

The essential fact to recall in the development of the *m*-cases and the loc. pl. is that SPL and Proto-VDL were discrete events, possibly separated by centuries. In the history of the dat. pl., the "SPL" phase established a left-marginal accent in all stem types, either by SPL *qua* sound change or by post-SPL analogy. Consider the forms of an originally suffix-accented *ā*-stem, *i*-stem, "short" *o*-stem, and "long" *o*-stem:

PIE		post-SPL		post-SPL + analogy
**golHu̯éh₂mos*[61]	>	**golHu̯ȧHmos*	→	**gȍlHu̯aHmos*
**mn̥tímos*	>	**mǹ̥timos*	=	**mǹ̥timos*
**u̯ornómos*	>	**u̯ȍrnomos*	=	**u̯ȍrnomos*
**golHu̯inómos*	>	**golHu̯i̇nomos*	→	**gȍlHu̯inomos*

60 In Čakavian, *krȃva* (nom.) shows the regular BCS conversion of a Proto-Slavic long rising to a short falling tone, while *krâv-* (gen. pl.) retains the Proto-Slavic long falling. In Slovenian, *kráva* (nom.) has a long rising tone, the regular reflex (via shortening and relengthening) of the Proto-Slavic long rising, while *krâv* (gen. pl.), like its Čakavian counterpart, retains the Proto-Slavic long falling. In Czech, *kráva* (nom.) retains the length of the Proto-Slavic long rising, while *krav* (gen. pl.) shows the regular shortening of vowels with an original long falling tone.

61 I adopt the convenient fiction that **-mos*, **-mīs*, etc. were "PIE" endings, thus sidestepping the unrelated problem of the relationship of these sequences to the **bʰ*-endings of Indo-Iranian, Armenian, Mycenaean Greek, and Italo-Celtic. **-bʰ-*, in my opinion, was original

The left-marginal accent was phonologically regular in *i*- and shorter *o*-stems.[62] It was analogical in *ā*-stems, where the PIE accent stood on a closed syllable, and in longer *o*-stems, where the purely phonological operation of SPL would have positioned the accent on an internal syllable.

Proto-VDL now applied phonologically in long stems and analogically in shorter ones:

post-SPL/anal.		post-Proto-VDL		Proto-VDL/anal.		Proto-BSl.		Lith.		PSl.
**gòlHu̯aHmos*	=	**gòlHu̯aHmos*	→	**golHu̯aHmȯs*	>	**galvā́mas*[63]	>	*-óm(u)s*	|| >	**-ā́mъ*
**mǹ̥timos*	=	**mǹ̥timos*	→	**mn̥timȯs*	>	**mintimȧs*	→	*-ìm(u)s*	|| >	**-ьmъ*
**u̯ŏrnomos*	=	**u̯ŏrnomos*	→	**u̯ornamȯs*	>	**varnamȧs*	→	*-àm(u)s*	|| >	**-omъ*
**gòlHu̯inomos*	>	**golHu̯inomȯs*	=	**golHu̯inamȯs*	>	**-amȧs*	→	*-àm(u)s*	|| >	**-omъ*

The forms attested in Slavic are the direct phonological continuants of their Proto-BSl. prototypes (but see note 69). In Lithuanian there were two post-BSl. developments: 1) the unexplained (but in the present context irrelevant) replacement of **-mas*, attested in Old Prussian, by Old Lith. *-mus*, whence Mod. Lith. *-ms*; and 2) the generalization of penultimate accent from the *ā*-stems, where it was regular by Hirt's Law (*galvóm(u)s* = PSl. **golvā́mъ*), to all the other declensions (*-àm(u)s*, *-ìm(u)s*, *-ùm(u)s*).[64]

5.3.4 *Instrumental Plural* (*x . . x́*)

In the instr. pl. the *o*-stems had a "light" ending **-ōis* which retained the accent under SPL, and which, like the *o*-stem endings discussed in 5.2.2.1–3, resisted pressure to conform to the curve of the other stem types:[65]

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everywhere; the substitution of **-m-*, whatever its explanation, was a shared innovation of Balto-Slavic and Germanic. See further note 65 and 5.3.7.

62 As well as in *u*-stems (**suHnúmos* > **sùHnumos*) and, perhaps, depending on details of relative chronology, *r*- and *n*-stems (**dʰugh₂tŕ̥mos* would have given **dùktr̥mos*; **dʰugh₂térmos* would have given **duktèrmos*).

63 With retraction by Hirt's Law.

64 According to Carrasquer Vidal 2014: 14 f., the retraction in these forms was by Nieminen's Law (cf. above, 5.2.1 with note 34). This assumes that Nieminen's Law was earlier than the replacement of the old ending **-mas* by OLith. *-mus*.

65 The instr. pl. endings themselves call for brief comment. As argued in Jasanoff 2009b: 141–4, the oldest form of the instr. pl. ending was probably **-is*, direct traces of which survive in scattered adverbs like Ved. *bahíḥ* 'outside', Gk. *mógis* 'hardly', etc. In the demonstrative pronouns, which had plural stems in **-oi-* (cf. nom. pl. **tói*, gen. pl. **tóisoHom*, dat. pl. **tóibʰ(i̯)os*, loc. pl. **tóisu*), the addition of **-is* to **-oi-* produced the sequence **-oi̯-is*, which gave **-ōis* within the protolanguage (**tói̯is* > **tṓis*) and spread from pronouns to

PIE		post-SPL		post-SPL + analogy
**golHu̯éh₂mīs*	>	**golHu̯ȧHmīs*	→	**gȍlHu̯aHmīs*
**mn̥tímīs*	>	**mǹ̥timīs*	=	**mǹ̥timīs*
**u̯ornṓis*	>	**u̯ornṓis*	=	**u̯ornṓis*
**golHu̯inṓis*	>	**golHu̯inṓis*	=	**golHu̯inṓis*

Proto-VDL then operated in the usual way. It was inapplicable in the *o*-stem forms, which were already oxytone.[66]

post-SPL/ anal.		post-Proto-VDL		Proto-VDL/ anal.		Proto-BSl.		Lith.			PSl.
**gȍlHu̯aHmīs*	=	**gȍlHu̯aHmīs*	→	**golHu̯aHmī̍s*	>	**gal̲vā̲mī̲s*	→	*-omìs*	||	>	**-ā́mi*
**mǹ̥timīs*	=	**mǹ̥timīs*	→	**mn̥timī̍s*	>	**mintimī̲s*	>	*-imìs*	||	>	**-ьmi̍*
**u̯ornṓis*	=	**u̯ornṓis*	=	**u̯ornṓis*	>	**varnṓi̲s*	>	*-aĩs*	||	>	**-ỳ*[67]
**golHu̯inṓis*	=	**golHu̯inṓis*	=	**golHu̯inṓis*	>	**-inṓi̲s*	>	*-aĩs*	||	>	**-ỳ*

An interesting detail is that just as Lithuanian generalized the Hirt's Law-induced penultimate accent of the *ā*-stems in the dat. pl. (phonologically regular *-óm*(*u*)*s*, but also *-ìm*(*u*)*s*, *-ùm*(*u*)*s*, *-àm*(*u*)*s*), it *overrode* Hirt's Law to generalize final accent in the instr. pl. (*-imìs*, *-umìs*, but also "irregular" *-omìs*).

5.3.5 *Locative Plural* (*x . . x̍*)

The development of the loc. pl. was the same as in the dat. pl., except that here the establishment of left-marginal accent in the *o*-stem forms was analogical. Phase 1:

PIE		post-SPL		post-SPL + analogy
**golHu̯éh₂su*	>	**golHu̯ȧHsu*	→	**gȍlHu̯aHsu*
**mn̥tíšu*	>	**mǹ̥tišu*	=	**mǹ̥tišu*
**u̯ornóišu*	>	**u̯ornȯišu*	→	**u̯ȍrnoišu*
**golHu̯inóišu*	>	**golHu̯inȯišu*	→	**gȍlHu̯inoišu*

o-stem nouns. The same **-is*, added to the adverbial ending **-bʰi*, yielded **-bʰi-is* > **-bʰīs*, whence eventually BSl. **-mī̲s*, with an acute long vowel. Contamination, rather than concatenation, of **-bʰi* with **-is* produced **-bʰĭs* (**-mĭs*), the source of the parallel short-vowel ending in Indo-Iranian, Celtic, and Germanic. I know of no independent evidence or rationale for a reconstruction **-bʰiHs*.

66 Note, however, that it *would* have applied phonologically in longer *ā*- and *i*-stems. These would have been plentiful: longer *ā*-stems included, e.g., the feminines of the adjectives in **-ino-*, **-iško-*, etc., and longer *i*-stems included the antecedents of the common Slavic abstracts in **-ostь*.

67 There is also evidence for a secondary accentuation **vôrny*. Cf. Olander 2009: 190.

And phase 2:

post-SPL/ anal.		post-Proto-VDL		Proto-VDL/anal.		Proto-BSl.		Lith.[68]		PSl.
**gòlHu̯aHsu*	=	**gòlHu̯aHsu*	→	**golHu̯aHsù*	>	**ga̲lvā̲su*	→	*-osù*	|| >	**-ǎxъ*
**mǹ̥tišu*	=	**mǹ̥tišu*	→	**mn̥tišù*	>	**mintišù*	>	*-isù*	|| >	**-ьxъ́*
**u̯ȍrnoišu*	=	**u̯ȍrnoišu*	→	**u̯ornoišù*	>	**varnaišù*	→	*-uosù*	|| >	**-ěxъ́*
**gòlHu̯inoišu*	>	**golHu̯inoišù*	=	**golHu̯inoišù*	>	**-aišù*	→	*-uosù*	|| >	**-ěxъ́*

The Slavic forms, again, are the regular continuants of their Proto-BSl. precursors.[69] In standard Lithuanian and most of its dialects, the final *-u* was replaced by *-e* < **-e̲* < **-ēn*, imported from the loc. sg.[70] In dialects that retain the inherited ending *-su*, the accent is conservatively on the final syllable even in *ā*-stems (*galvosù*), overriding the phonological Hirt's Law treatment (seen in dat. pl. *galvóm*(*u*)*s*). The Latv. loc. pl. form *galvâs* < **ga̲lvā̲sù* (cf. 2.3.1) shows that final accent in the loc. pl. was a well-established East Baltic feature and not (*pace* Olander 192) analogical in Lithuanian.

5.3.6 *Dative and Instrumental Dual* (*x . . ẋ*)

The dative and instrumental dual were probably identical in PIE, but the exact shape of the BSl. form of the ending is unrecoverable. In Slavic, where the ending is **-ma*, the accentuation is predictably the same as in the other heavy cases: **golvā́ma, *kostьmȁ, *vornomȁ*, etc. In Lithuanian a secondary distinction was introduced between the dat. du. in *-óm, -ìm, -ùm*, with accent on the stem vowel as in the dat. pl. (*-óms, -ìms, -ùms*), and the instr. du. in *-omˀ, -imˀ, -umˀ* (< **-omV́, *-imV́, *-umV́*), with accent on the desinence proper, as in the instr. pl. (*-omìs, -imìs, -umìs*). Deletion of the vowel of the ending in the instrumental caused the ictus to be displaced to the rightmost mora that remained.

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68 In this case, Old and dialectal Lithuanian; see below.

69 Mention should be made, however, of the small group of *i*-stems, discussed by Stang 1957: 88–90 and Olander 2009: 188–9, in which the loc. pl. and dat. pl. seem to have been enclinomena: cf. OR *ljúdexъ, ljúdem* (= R *ljúdjax, ljúdjam*) 'people'; *dětexъ, dětemъ* (= R *détjax, détjam*) 'children'; *kóstexъ* 'bones'; *óčex* 'eyes'; etc. No position is taken here on these forms, save to register general agreement with Stang's suspicion that their deviant accentuation is connected with their frequent collective meaning and possible morphological history as something other than ordinary plurals.

70 The other major remodeling seen in the loc. pl. was the replacement of the inherited *o*-stem ending *-iesu* (*-iese*), which survives dialectally and in adverbs, by *-uosu* (*-uose*) under the influence of the illative plural in *-uosna* (Stang 1966: 186).

5.3.7 *Addendum: the Instrumental Singular*

The instr. sg., with both heavy and light endings depending on declension, presents a puzzling array of forms:

	ā-stems	*i*-stems	*u*-stems	cons. stems	*o*-stems
Lith.	*gálva* < **-ān*	*mintimì*	*sūnumì*	*dukterimì*	*varnù* < **vãrnō*[71]
Slavic	**golvojǫ̑*	**gostьmь*[72]	**synъmь*	**dъćerьmь*	**vȏrnomь*

Of the ten forms displayed, only one—Lith. *varnù* < **vãrnō*—goes back directly to an IE preform with the "correct" ending (**u̯ornó-h₁*). Even this, it will be noted, has the "wrong" accent.

The clearest forms, accentually speaking, are those of the *i*-, *u*-, and consonant stems. These are mainly the replacements of earlier "light" forms in **-íh₁*, **-uh₁* and **-éh₁*, respectively. The PIE adverbial formative **-bʰi*, which formed the basis of the instr. pl. in **-bʰĭs* (i.e., **-bʰ(i)* + **-is*; cf. note 65) and the dat. pl. in **-bʰ(i̯)os* (i.e., **-bʰ(i)* + **-os*), was dialectally used in its "raw" form as an instr. sg.; outside Balto-Slavic, this specialization is also documented in Armenian (cf. instr. sg. *harb*, pl. *harbkʿ* < **ph₂tr̥-bʰi*, **ph₂tr̥-bʰĭs*). By this means pre-Balto-Slavic acquired *i*- and *u*-stem instr. sg. forms in **-ími* and **-úmi*, respectively, as well, perhaps, as consonant-stem forms in **-ŕ̥mi* (if not **-érmi*) and **-ń̥mi* (if not **-énmi*).[73] These triggered SPL, giving protomobile forms of the type **mn̥̄timi*, **sùHnumi*, **dùktr̥̄mi*(?), etc. All became oxytone with the quasi-regular post-Proto-VDL generalization of final accent in the *m*-cases. In Lithuanian, **-mĭ* was subsequently replaced by **-mī*, with **-ī-* imported from the instr. pl. in **-mīs*.

The *ā*- and *o*-stems are more difficult. Lith. *gálva* goes back to a preform in **-ān*; both the nasal and the acuteness can be seen in the corresponding long adjective form (*gerą́-ja*). Given the general parallelism of *i*-, *u*-, and *ā*-stems and the fact that *i*- and *u*-stems have instr. sg.'s in **-imi* and **-umi*, it is hard to believe that Proto-BSl. **gãlvān* could be anything but an apocopated form of **gãlvāmi* < **gòlHu̯aHmi*. Proceeding on this assumption, we can envisage a scenario like the following: (1) the inherited instrumental **golHu̯éh₂-h₁* was replaced by **golHu̯éh₂-mi*; (2) **golHu̯éh₂mi* underwent analogical SPL, giving **gòlHu̯aHmi*, as in the other heavy cases (cf. instr. pl. **golHu̯éh₂mīs* → **gòlHu̯aHmīs*, loc. pl.

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71 By Saussure's Law; cf. *kélmu*.

72 A masculine *i*-stem form is cited because feminines have **-ьjǫ̑* (**kostьjǫ̑*, etc.), with *-jǫ̑* taken from the corresponding *ā*-stem form.

73 Cf. note 62. Depending on whether the zero grade of the suffix was replaced by full grade before or after SPL, the retraction would have been phonologically regular or analogical.

golHu̯éh₂su* → **gòlHu̯aHsu*, etc.); (3) the new **gòlHu̯aHmi*, by virtue of its syllabic structure and unlike the corresponding *i*- and *u*-stem forms, underwent apocope to **gòlHu̯aHm*;[74] (4) **gòlHu̯aHm*, being disyllabic and no longer resembling a normal *m*-case form, *failed* to undergo the analogical version of Proto-VDL, but retained its left-marginal accent, whence **gă̱lvā̱n*. The form **gă̱lvā̱n* in turn sheds light on the longer *ā*-stem instrumental in Slavic (golvojǫ̀* < **ga̱lvai̯ā̱̀n*). PSl. **golvojǫ̀* contains the Slavic counterpart of Ved. *-ayā* < **-éH₂-ih₂eh₁*, with the "*devī*-stem" instr. sg. in **-ih₂-eh₁* added to the stem in **-éh₂-* and the first of the two laryngeals in the added ending deleted by the "*AHIHA* rule."[75] The resulting sequence, like the shorter form in Baltic, received a redundant **-mi* (→ **golHu̯áih₂eh₁mi*) and underwent analogical SPL and apocope, giving **gòlHu̯ai̯aHm*.[76] But while disyllabic **gòlHu̯aHm* resisted analogical Proto-VDL and remained barytone, trisyllabic **gòlHu̯ai̯aHm* was treated like any other trisyllabic form (cf. **gòlHu̯aHsu* → **golHu̯aHsù*, etc.) and shifted the accent to the end of the word (→ **golHu̯ai̯àHm* > **ga̱lvai̯ā̱̀n* > **golvojǫ̀*).[77]

The history of the *ā*-stem instrumentals shows that the common accentual paradigm of *ā*-, *i*-, *u*-, and consonant stems—the "curve" described in 5.1.1—was already a robust synchronic force in the period of protomobility that followed SPL and preceded Proto-VDL. In the instr. sg. the curve dictated a left-marginal accent, either by sound change or analogy; **mǹ̥timi*, **sùHnumi*, and possibly **dùkt(e)rmi* are phonologically regular from **mn̥tímі*, **suHnúmi*, **duktŕ̥mi*, while **gòlHu̯aHm(i)* and **gòlHu̯ai̯aHm(i)* have their left-marginal accent by *Systemzwang* from **golHu̯áHmi* and **golHu̯ái̯aHmi*. Herein lies the explanation for the mysterious *o*-stem instr. sg. **vȍrnō̱* (Lith. *varnù*, *kélmu*), with left-marginal accent instead of the phonologically expected accent on the ending (**varnṑ̱* < **u̯ornóh₁*).[78] The "wrong" left-marginal accent in this form

74 One thinks, inevitably, of the Slavic 1 sg. pres. in **-ǫ* < **-ōm'* < **-ōmi*, with the same recharacterization of the inherited ending as in Ved. *bhárāmi* 'I carry' and Gaulish *uediiumi* 'I ask'. But the timelines were very different. The instr. sg. in **-ā̱n* < **-ā̱m* < **-aHm(i)* was already on hand in Proto-Balto-Slavic, while the 1 sg. in **-ǫ* was wholly a Slavic creation.

75 Cf. Jasanoff 2003: 102. The rule was identified by Jochem Schindler. It is not altogether obvious to me that the ending *-ayā*/**-ojǫ* was pronominal, as often stated.

76 Analogical SPL because the second syllable in **golHu̯áih₂eh₁mi* was long.

77 The accent of R *golovóju*, if old and not taken from AP b (so Olander 2009: 176, following Stang), may simply copy that of the instr. pl. in *-ámi*.

78 The Slavic form, **vȍrnomъ*, is transparently a late alteration of what would have been **vȍrna* < **vȁrnō̱*, with **-mъ* added to the stem on the model of the *i*- and *u*-stems, but the left-marginal accent preserved. If, as usually assumed, **vьčerà* 'yesterday' (R *včerá*) is properly the instr. sg. corresponding to **vȅčerъ* 'evening', it could show the retention of the accent in its original (final) position in a paradigmatically disassociated form.

recalls the situation in the *o*-stem dat. sg. (Lith. *vařnui*, PSl. **vôrnu* < Proto-BSl. **vàrnōi* for expected **varnōi* < **u̯ornṓi*; 5.2.1), where the observed left-marginal accent was imposed by the other dat. sg. forms (**gãlvāi*, etc.). What makes the left-marginal accent in the instr. sg. **vàrnō* opaque is that although it is analogical, most of the forms it is analogical *to*—post-SPL **mĩ̯timi*, **sùHnumi*, **gòlHu̯ai̯aHm(i)*, possibly **dùkt(e)rmi*—were subsequently rendered oxytone in the analogical aftermath of Proto-VDL.

5.4 Neuters

5.4.1 o-*stems*

The neuter gender has hardly figured in our discussion so far. There are good reasons for this. In East Baltic the neuter has virtually disappeared, being confined to pronominal forms like anaphoric *taĩ* 'that' and invariant adjective forms (e.g., *gẽra* 'good', *sunkù* 'difficult', etc.) with a restricted range of predicative and other non-attributive uses. A full-fledged neuter is still extant in Old Prussian, especially in the late medieval dialect of the Elbing Vocabulary, but it conveys little accentually relevant information. For the accentology of the neuter in Balto-Slavic, therefore, we must rely mainly on Slavic, where our material is largely restricted to *o*- and consonant stems.

5.4.1.1 *The Nom.-Acc. Endings*

As in other IE languages, neuter *o*-stems in Slavic have special endings in the nom.-acc. of all three numbers, but otherwise inflect like the corresponding masculines. The key forms are seen in the derived word for 'plow', AP a **ŏrdlo* (< **h₂érh₃-dʰlo-*; OCS *ralo*) 'plow', pl. **ŏrdla*, du. **ŏrdlě*. The plural and dual endings offer no surprises. The nom.-acc. pl. in **-a* is obviously the PIE collective ("neuter plural") in **-eh₂*. The dual in **-ě* < **-ai* < **-oïh₁* (= Ved. *-e* (e.g., *d(u)vé śaté* '200')) is likewise familiar, though not always reconstructed correctly at the PIE level. The *pragr̥hya* character of the Vedic nom.-acc. du. in *-e*, i.e., its failure to resolve into *-a(y)-* in external sandhi, suggests that the preform was disyllabic.[79]

The nom.-acc. sg. in **-o* is not the reflex of the expected PIE nominal ending **-om*, but of the pronominal ending **-od* (cf. Ved. *tát*, Gk. *tó*, Go. *þat*[*a*] = OCS *to*).[80] The spread of **-od* (= Proto-BSl. **-a*) at the expense of **-om*

79 Cf. 1.3.3.

80 Like most scholars, I reject Illič-Svityč's claim (1979: 114–6), following an idea of Hirt, that **-om* had separate accented (> **-o*) and unaccented (> **-ə*) treatments. See 5.4.1.4.

(= Proto-BSl. **-an*) was a post-BSl. trend. Old Prussian retains the original distribution: the reflex of **-od* occurs in a few pronouns (e.g., *sta* 'this', *ka* 'what'), while the reflex of **-om* is found in adjectives and nouns (e.g., *labban* 'good', *dalptan* 'punch, tool for punching' = R *dolotó* 'chisel'). East Baltic and Slavic independently extended **-od* to nouns and adjectives. Traces of **-od* in East Baltic can be seen in loanwords into Finnish (e.g., *silta* 'bridge' : Lith. *tìltas*, Ved. *tīrthám* 'ford'; *kela* 'coil, spool' : OPr. *kelan* 'wheel'), and in neuter adjectival forms of the type Lith. *gẽra*.[81] When Lithuanian and Latvian moved to a two-gender system, neuters were converted to masculines (cf. Lith. *árklas* 'plow', Latv. *ârkls*). In Slavic, which was more conservative, the neuter survived, and in at least one class of forms (see below, 5.4.1.4) the ending **-om* (> later Slavic **-ъ*) resisted replacement by **-od* (> later Slavic **-o*).

5.4.1.2 *The Treatment of Oxytone Neuters*

Given what we know about the treatment of animate stems, we should expect oxytone neuters, like oxytone animates, to come out in AP c in Slavic. In part, this is what we find. An example is **âje* < **h_2ōu̯i̯ó-* 'egg', forming an equation with Gk. *ōión* 'id.':

sg.	nom.-acc.	**âje*	pl.	**ajȁ*	du.	**âji*[82]
	gen.	**âja*		**ajȇ*		
	dat.	**âju*		**ajemȍ*		**ajemȁ*
	instr.	**âjemь*		**ajì*		"
	loc.	**âji*		**ajixȍ*[83]		

Most of the forms are self-explanatory. The oblique cases are the same as in the corresponding masculines in all three numbers. In the nom.-acc., the singular **âje* < **ā̀i̯an* has left-marginal accent by SPL/final **-V̌N(C)* retraction, with subsequent substitution of the pronominal ending (fronted to *-e* after *-j-*) for what would otherwise have been **-ъ* < **-(i̯)om*. Since pre-BSl. **-ȁH* < **-éh$_2$* would not have been subject to SPL, the nom-acc. pl. **ajȁ* is predictably oxytone. The left-marginal accent of the nom.-acc. du. has regular retraction by SPL from disyllabic **-óïh$_1$*.

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81 Evidently the replacement of BSl. **gẽran*, with left-marginal accent by **-V̌N(C)* retraction from **-óm*. There was no corresponding retraction in the *u*-stem adjective *sunkù* because *u*-stem neuters ended in **-u*, not **-um*.

82 With **-i* < **-ě$_2$* after **-j-*

83 With unclear occasional left-marginal accent in the loc. pl.; see Stang 1957: 84 f. and Olander 192.

Other conspicuous inherited oxytones with reflexes in AP c include **mę̑so* 'meat' < **mēmsó-* (: Ved. *māṃsá-*),[84] and **sъ̌to* '100' < **ḱm̥tó-* (: Ved. *śatám*). Such words must once have been common. But owing to the late productivity of another pattern, the bulk of historically oxytone neuter *o*-stems surface synchronically in AP b.

The canonical AP b paradigm, to which we now turn, can be seen in the declension of **kridlò* (< **kréi-dʰlo-*; OCS *krilo*) 'wing':

sg.	nom.-acc.	**kridlò*	pl.	**kridlà*	du.	**kridlě̀*
	gen.	**kridlà*		**kridlь̀*		
	dat.	**kridlù*		**kridlòmъ*		**kridlòma*
	instr.	**kridlòmь*		**kridlỳ*		"
	loc.	**kridlě̀*		**kridlě̂xъ*		

These are ideal AP b forms, with regular movement of the accent from the root to the stem vowel by Dybo's Law, and as such hardly requiring comment.[85] By the time of the historical Slavic dialects, however, the overall look of the paradigm had been considerably altered by Stang-Ivšić's Law. This rule, it will be recalled, retracted the accent from a word-internal long falling ("circumflex") vowel or a weak jer. Retraction of loc. pl. **kridlě̂xъ* to later **krĩdlěxъ*, and of gen. pl. **kridlь̀* to later **krĩdlь*, with neoacute, would thus have been completely regular. But BCS, Slovenian, and Russian show a more general leftward shift in the plural, proper not only to the loc. pl. and gen. pl., but also to the nom.-acc. pl. and instr. pl. The origin of this more comprehensive retraction was an apparent secondary lengthening of these two endings, causing them to receive an automatic non-contrastive falling tone (**kridlà, *-dlỳ* → **kridlâ, *-dlŷ*) and thus to trigger Stang-Ivšić's Law (**kridlâ, *-dlŷ* → **krĩdlā, *-dlȳ*; cf. **voljâ* > **vòljā*).[86]

AP b *o*-stem neuters partly go back, as one would expect, to root-accented non-acute stems. **kridlò* is such a case, and here belong many other derived stems, such as **sidlò* 'noose' < **sh₂éi-dʰlo-*, **čerslò* 'plowshare' < **kérs-lo-* (: Lith.

84 **mēmsó-* is an unproblematic word in Slavic, but its Baltic counterparts are difficult. For the forms, which have been wrongly held to support the "circumflex" treatment of long vowels, see Derksen 2015 s.v. *mėsa* and Villanueva Svensson 2011: 12.

85 The formation, of course, is exactly the same as in **ȍrdlo* (AP a), but with a non-acute root.

86 On the general problem of length in final syllables see ch. 2, note 26, and on **vòljā* in particular ch. 2, note 42. In the present case, one thinks of the possible influence of the verbal nouns in pre-Dybo's Law **-ьje*, where the **vòljā*-rule would have led to a nom.-acc. pl. in **-jâ*. Note that there was no neoacute retraction in the nom.-acc. du. (older R *krylé* '(two) wings'; Stang 1957: 83).

keřslas (2) 'chisel'), and **doltȍ* 'chisel' < **dʰólbʰ-to-* (: OPr. *dalptan*). But it is a surprising fact, pointed out by Illič-Svityč (1979: 104–7), that the synchronically *non*-derived neuters of AP b mostly go back not to root-accented forms, but to *oxytone* neuters—stems that ought according to the general rule to have become mobile. Here belong, e.g., PSl. **dъnȍ* 'bottom', pl. **dъnȁ* > **dъ̀na* (BCS *dnȏ*, *nà dno* < pre-Neo-Štokavian shift **na dnȏ*) beside Lith. *dùgnas* (4) < **dʰubʰnó-*; and PSl. **gnězdȍ* 'nest', pl. **gnězdȁ* > **gnĕ̀zda* (R *gnezdó*, pl. *gnëzda*) beside Ved. *nīḍá-* (masc.), Gk. *nizdós* < **nizdó-*;[87] see Illič-Svityč *loc. cit.* for further examples. The anomaly of oxytone stems turning up in AP b becomes intelligible if we suppose that a critical nucleus of the relevant forms historically had barytone collective plurals of the type familiar from Lat. *loca* 'places' beside sg. *locus*, Gk. *mêra* 'thigh bones' beside sg. *mērós* 'thigh', and Gk. *kúkla* 'rings' (with back-formed(?) sg. *kúklos*) beside Ved. *cakrá-* (masc. and nt.) 'wheel'. Consider, e.g., the widely distributed PSl. **perȍ* 'feather' (cf. BCS *pèro* (with Neo-Štokavian retraction), pl. *pȅra* (neoacute); Ukr. *peró*, pl. *péra*). If we assume that this word began its career as **peróm* with a collective plural **péreh₂* 'plumage, *Gefieder*',[88] the singular would have developed in the normal way, acquiring uniform left-marginal accent (**pĕ̀r-*) through the usual mixture of sound change (SPL/final **-V̆N*(*C*) retraction) and analogy. The collective, however, would not have received a left-marginal accent at all, but would have remained unchanged until the lexical accent was later shifted rightwards by Dybo's Law. For a time, then, the singular would have been **pĕ̀ro*, gen. **pĕ̀ra*, etc., with synchronic plural **pȅra*, gen. **pȅrъ̨*, etc. This would not have been a stable arrangement. Faced with a singular : plural pair like **pĕ̀ro* : **pȅra*, new speakers would have been tempted to generalize either the one accent type or the other. In the case of "feather," where the plural/collective **pȅra* might have been more salient in ordinary speech than the singular **pĕ̀ro*, it was the plural that "won," imposing its lexical accent on the singular (**pĕ̀ro* → **pȅro*). The now regularized **pȅro*, pl. **pȅra* was in due course converted by Dybo's Law to AP b **perȍ*, **perȁ* (> **pèra*). It is probably no accident that a significant representation of Illič-Svityč's examples of the **perȍ*, **perȁ* pattern, which became productive, are words that would naturally have tended to be used collectively. Examples include R *nutró* 'viscera', *jadró* 'kernel', and even *dnó* in the sense 'depths'. Several AP b neuters are actually pluralia tantum, e.g., R *voróta* 'gate'

87 With as yet unexplained **gnĕ-* for **ni-* or **nь-* in Slavic, presumably by some kind of contamination. Lith. *lìzdas* (4) has also been deformed.

88 Illič-Svityč equates PSl. **perȍ* with Gk. *pterón* 'id.', but this seems unlikely. The Greek word is a derivative of *pétomai* 'fly' (root **petH-*), while **perȍ* goes with OCS *perǫ*, *pręti* 'fly' and Lith. *spařnas* 'wing'.

< pre-retraction **vortȁ* < pre-Dybo's Law **vȍrta*, and dialectal BCS *jẽtra* 'liver' < pre-retraction **jętrȁ* < pre-Dybo's Law **jȇtra*, forming a virtual word equation with Gk. *éntera* 'intestines' and its back-formed sg. *énteron*.[89]

5.4.1.3 *Illič-Svityč's Law*

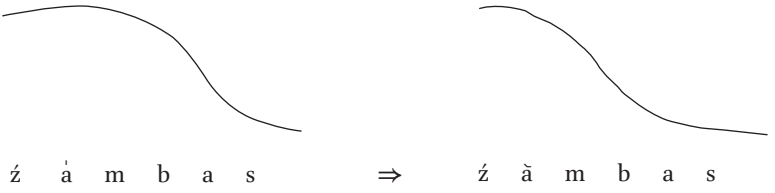
The unexpected transfer, so to to speak, of oxytone *o*-stem neuters from AP c to AP b, is only one of three surprising developments involving the relationship of gender and accent in *o*-stems. The other two are closely related and must be discussed together.

PIE root-accented nouns never "regularly" developed mobility; barytone stems gave accent type 1 in Lithuanian (*várna*) and AP a in Slavic (**vȏrna*) if acute, and accent type 2 (*blusà*) in Lithuanian and AP b in Slavic (**blъxȁ*) if non-acute. Yet it is a remarkable fact that non-acute, root-accented, masculine *o*-stems—forms which by all accounts ought to have surfaced in AP b—consistently belong to AP c in Slavic. A representative case is PSl. **zǫ̑bъ* 'tooth', mobile, but with cognates (Ved. *jámbha-* 'tooth', Gk. *gómphos* 'bolt', Lith. *žam̃bas* (2) 'sharp edge') that unequivocally point to PIE **ǵómbʰos*. Other instances are PSl. **sn̥̑gъ* 'snow' for expected **sněgъ* (: Lith. *sniẽgas* (2 dial.) and **rȍgъ* 'horn' for expected **rogъ* (: Lith. *rãgas* (2 dial.)); Illič-Svityč *op. cit.* 99 ff. gives more. The pre-Slavic "mobilization" of words like **źȁmbas*, **snȁigas*, **rȁgas*, etc. is known as **Illič-Svityč's Law**. Illič-Svityč himself took the process to be analogical. He opined that since both inherited mobiles and original barytones had initial accent in most of their forms at some point in their history (cf. PSl. **vôrnъ*, **vôrna*, **vôrnu*, **vôrnomь*, **vôrně*; Proto-BSl. **źȁmbas*, **źȁmbā*, **źȁmbōi̯*, **źȁmban*, **źȁmbō̯*, **źȁmbai*), the two types could be confused and identified, and the differences between them eliminated by leveling. In view of what we know now, however, this cannot be correct. The forms ancestral to PSl. **vôrnъ*, **vôrna*, etc. had left-marginal accent in Proto-Balto-Slavic (**vȁrnan*, **vȁrnā*, etc.), while the forms of **źamba-* had lexical accent. There was no danger of the two paradigms ever becoming confused or falling together. The audible distinction between the lexical and left-marginal accents was maintained

89 Illič-Svityč's account of these forms (*ibid.*) is similar but not identical. Of **perȍ*-type nouns he correctly says (105) that "they correspond to IE forms with columnar oxytone accent in the singular and barytone in the plural"—presumably alluding to the *mērós* : *mḗra* pattern. But his statement (106) that "the columnar oxytone accent in the singular of the items listed above [= **perȍ*, etc.] is a direct reflex of the comparable IE accentuation" cannot be correct. The Slavic oxytone type in nominal inflection (AP b) is never a *direct* reflex of IE oxytonicity. It may be, as here, an indirect reflex.

in Slavic until the time of Dybo's Law, which affected the former but not the latter.[90]

How then *did* nouns like Proto-BSl. **źȧmbas*, **źȧmban*, etc. become, in effect, **źằmbas*, **źằmban*, etc. on the way to Slavic—and only on the way to Slavic? The answer was seen, I believe, by Holzer (2009: 158), who posited a sound change by which, in our terms, a lexical accent on a non-acute nucleus became a left-marginal accent before a final pre-Slavic **-as*.[91] Phonetically, this would have meant that the falling contour which naturally accompanied a post-tonic syllable was "rejected" by the sequence **-as*, displacing the tonal fall to the root syllable:



One is inevitably reminded of the late retraction of the accent from *-as* by Nieminen's Law in Lithuanian (*gẽras* < **geràs*), another rule in which final *-as* seems to have rejected any hint of a tonal contour. Once **źȧmbas* had become pre-Sl. **źằmbas*, it would have been a straightforward analogical change for the left-marginal accent to spread to the accusative and other singular forms (**źȧmban* → **źằmban*, etc.), in effect making the whole paradigm mobile.[92]

Ad hoc sound changes, as this one might seem to be, should always be regarded with suspicion. But "Holzer's metatony," as we may call it, is

90 It was, of course, Illič-Svityč's own work, and that of his colleague V. A. Dybo, that later made this difference clear.

91 Holzer describes the change, in keeping with the typical Slavic practice, as a "loss" of accent. A similar idea was earlier suggested by Dybo and Nikolaev (1978: 7).

92 In this connection, Holzer cites an accent pattern that has been labeled "AP d" in the Croatian dialects of northeastern Istria, characterized by left-marginal accent in the nominative and accusative and oxytonicity (by Dybo's Law) in the oblique cases. The status of this type, evidence for which has been brought forward from other Slavic dialects, has been disputed since the facts were first discussed by Illič-Svityč himself (1979: 103–4). No position is taken on the AP d question here, other than to note that a paradigm nom.-acc. **zǫ̂bъ*, gen. **zǫbȧ* < **zǫ̀ba* would make perfect sense if **zǫ̂bъ* were a phonological replacement of **zǫ̀bъ*. The controversy is summarized and negatively assessed by Vermeer apud Lehfeldt 2009: 133 ff.

independently motivated.[93] Its most striking other domain of application is in neuter *s*-stems—the stem-type seen in OCS *nebo* 'heaven', gen. *nebese* and *slovo* 'word', gen. *slovese*. Such forms were proterokinetic in pre-PIE; their descendants have columnarized accent on the root in Vedic (*śrávaḥ* 'fame', gen. *śrávasaḥ*) and Greek (*kléos* 'id.', gen. *kléous* < **kléwe*[*h*]*os*). We should thus have expected AP b in Slavic (post-Dybo's Law ***nebò*, gen. ***nebèse*, pl. ***nebèsa*). But the actual forms, except when the root is acute, are consistently mobile (**nèbo*, pl. **nebesà*; **slòvo*, pl. **slovesà*; etc.).[94] Holzer's insight was to recognize that the replacement of expected pre-Sl. **nèbas* by **nĕbas* was the same process as the replacement of pre-Sl. **źàmbas* by **źămbas*. Forms like **nĕbas* (→ **nĕbo*) gave rise to a complete mobile paradigm based on the curve of neuter *o*-stems. The accentual proportion was

nom.-acc. sg. **mę̑so* : pl. **męsà* :: nom.-acc. sg. **nĕbo* : pl. X; X = **nebesà*,

and so on in the other cases.

5.4.1.4 *Root-accented* o*-stem Neuters*

The third anomaly in the treatment of accent and gender in *o*-stems is the unexpected transformation of unmotivated root-accented, non-acute neuters, which ought to have undergone Dybo's Law and given AP b neuters, into AP b *masculines*. The only root-accented neuters we have met thus far have been the derived stems **ŏrdlo*, which is acute (AP a), and the type **kridlò* (< **kréi-*), which predictably advances the accent (AP b) and remains neuter. When we turn to simple, non-derived cases, however, the forms we find are **dvorъ̀* (AP b masc.) 'court' < **dʰu̯órom* (: Lat. *forum* 'open space'); **pьrstъ̀* (AP b masc.) 'finger' < **pŕ̥stom* (: Lith. *piršt̃as* (2) 'id.', OPr. *pirsten*); **ščitъ̀* (AP b masc.) 'shield' < **skéitom* (: Lith. *skiẽtas* (2) 'reed in a loom', OPr. *staytan* 'shield'); and others discussed by Illič-Svityč (108 ff.). Building on Hirt (1893: 348–9), who first recognized the pattern, Illič-Svityč related the gender shift in barytone *o*-stems to the phonological treatment of the nom.-acc. ending **-om*, which he believed gave **-o* under the pre-Dybo's Law accent but **-ъ* when unaccented. Since **-ъ* was also the masculine *o*-stem ending, Illič-Svityč proposed that the barytone neu-

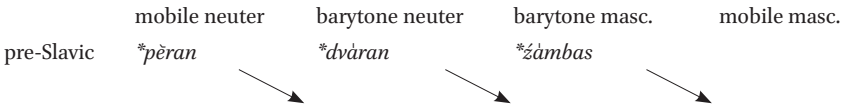
93 As was earlier the case in the question of whether it made sense—as it did and does—to posit a rule of final **-V̌N*(*C*) retraction.

94 The one clear example of an acute *s*-stem, **čűdo*, gen. *-ese* (a) 'miracle', remained unaffected, matching the stable AP a behavior of acute root-accented *o*-stems (e.g., **dým*, *-a* 'smoke'). Evidently, something about the glottal component of acuteness protected the rising lexical accent from being reanalyzed as falling/left-marginal.

ters in **-ъ* < **-an* < **-om* were simply reinterpreted by speakers as masculine. The first part of this scenario—that PIE **-óm* gave PSl. **-ȯ*—is unacceptable,[95] but the second—that the shift from neuter to masculine in **dvorȕ* was due to the formal merger of the inherited neuter and masculine endings—has obvious appeal. Translated into our framework, Illič-Svityč's proposal means that the replacement of the inherited nom.-acc. neuter ending **-ъ* < **-an* < **-om* by **-o* < **-a* < **-od* was *resisted* in words of what would become the type **dvorȕ*. Why this should have been the case is not clear. The descriptive generalization can be formulated as follows, at least for disyllabic stems: the spread of **-o* (or earlier **-a* < **-od*) from pronouns and adjectives to neuter nouns was limited to cases where the root syllable, prior to Dybo's Law, was acute or bore a left-marginal accent. We thus find **lě́to*, pl. **lě́ta* (AP a) 'summer' (acute); **nèbo*, pl. **nebesà* (AP c) (< **nèb-*); **mę̑so*, pl. **męsà* (AP c) (< **mę̑s-*); and **perȍ*, pl. **perà*/**pèra* (AP b) (< **pèr-*; cf. 5.4.1.2); but conspicuously not ***dvorȍ*, pl. ***dvorà* (AP b) (< **dvȍr-*).[96] The underlying phonetic or morphological principle, if there was one, remains to be discovered.

5.4.1.5 *Summary: Accent and Gender in Non-acute* o*-stems in Slavic*

There is an unmistakable "chain shift" quality to the developments discussed in the preceding sections. **źàmbas*, theoretically an immobile masculine, became mobile **źàmbas*/**zǫ̑bъ*, while the theoretically immobile neuter **dvàran* took its place, becoming masculine **dvȍrъ* > PSl. **dvorȕ*. The position vacated by **dvàran*/**dvorȕ* was in turn filled by the originally mobile *perȍ*-type (Proto-BSl. **pěran* < **peróm*). Schematically:



95 If true, this rule would lead us to expect acc. sg.'s of the type ***vornȍ*, rather than **vôrnъ*, in AP c masculine *o*-stems, and ***ȍrdlъ* or ***lě́tъ* for **ȍrdlo* or **lě́to* 'summer' in AP a neuters. Slavic *Auslautsgesetze* are occasionally sensitive to acuteness (= "intonation"), but never to the place of the accent.

A Leiden view is given by Derksen 2004: 60–2, who rightly rejects Illič-Svityč's rule but assumes a Balto-Slavic-level morphological replacement of **-om* by **-od* in oxytone neuters. The problem in my view is purely Slavic.

96 We do, of course, find post-Dybo's Law **kridlȍ*, etc., and not ***kridlȕ*, in derived stems, but here the suffix would have remained **-dlo* in AP a, inhibiting any gender switch in AP b.

What actually happened in these cases can be summarized as follows:

quasi-PIE	Balto-Slavic	expected Slavic	actual Slavic	reason for treatment
**ǵómbʰos*	**źàmbas*	***zǫbъ̀*, m. (b)	**zǫ̂bъ*, m. (c)	change of **źàmbas* to **źàmbas* by Holzer's metatony; analogical spread of **źàmb-*
**dʰu̯órom*	**dvàran*	***dvorъ̀*, nt. (b)	**dvorъ̀*, m. (b)	non-replacement of **-an*/**-ъ* by **-a*/**-o*; reinterpretation of **-ъ* as masculine ending
**peróm*	**pě̀ran*	***pě̀ro*, nt. (c)	**pėrò*, nt. (b)	analogical replacement of pre-Sl. **pě̀ro* by **pėro* (> **pėrò*), based on pl. **pėra*

5.4.2 *Neuter Consonant Stems*

Consonant stems, with striking archaisms and undateable innovations often jostling side by side, are an unreliable source of accentological insight. We have already seen this in connection with the heavy cases, where the question arose (cf. note 62) whether the dat. pl. of the word for 'daughter' at the time of SPL was **duktŕ̥mos*, which would have triggered the rule, or **duktérmos*, which would not have. Yet a third possibility would have been **duktérimos*, which would have triggered both SPL and Proto-VDL. The result in the end was clearly an accented ending (**-mȁs*). But there were many ways this could have come about, depending on when exactly suffix ablaut was eliminated, when *i*-stems began to infiltrate the paradigm, and other variables. The methodological lesson for us is that we can use our knowledge of the accent rules, together with relevant philological and dialectological information, to define a set of possible accentual histories for a consonant stem like 'daughter'. What we cannot do is use consonant stems, with a history reflecting millennia of heightened susceptibility to analogical change, as a tool to discover the diachronic accent rules.

All this applies as well to neuter consonant stems, of which there are two types of obvious IE interest in (Balto-)Slavic, *s*-stems and *men*-stems. The Slavic *s*-stems have already been discussed in connection with Holzer's metatony (5.4.1.3). Except in cases where the root syllable is acute, these words are mobile, with a phonologically correct left-marginal accent in the nom.-acc. sg. (**nĕ̀bo*, **slŏ̀vo*, etc.) and an analogical final accent—based ultimately on the *o*-stems—in the plural (**nebesȁ*; also **nebesъ̀*, **nebesьmъ̀*, etc.).[97] Baltic offers

97 More exactly, final accent would have been phonologically regular in the tetrasyllabic gen. pl. **nĕ̀besoHon*, and either analogical or phonological in the other heavy cases depending on the relative chronology of the date of the insertion of **-i-* before the endings.

no further material. Lith. *debesìs* 'cloud' (: **nẽbo*) is mobile, but synchronically a masculine *i*-stem.[98] The former *s*-stem Lith. *mẽnuo* 'month', likewise an *i*-stem in Old Lithuanian (gen. sg. *mẽnesies*), was never neuter.

The neuter *men*-stems form a more varied group. From an IE point of view, the forms presuppose three, or perhaps four originally distinct ablaut-accent types (cf. 1.1.2):

> (1) an acrostatic type associated with Narten-aligned roots, e.g., **bʰér-mn̥*, gen. **bʰér-mn̥-s* 'burden' (3.4.2), with lengthened grade implied by the acute of PSl. **bę́rmę*;
>
> (2) a proterokinetic type associated with non-Narten roots, e.g., **u̯ért-mn̥*, gen. **u̯r̥t-mén-s* 'course', reflected, e.g., in PSl. **vêrmę* or **vermę̀* 'time' (accentuation uncertain);
>
> (3) a hysterokinetic type in nom.-acc. sg. **-mḗn* (< **-mén-h₂*), gen. **-mn-és*, the source of the ubiquitous Slavic ending **-mę* (see below); and
>
> (4) an amphikinetic type in nom.-acc. sg. **-mṓ* (< **-mṓn* < **-món-h₂*), the source of Lith. *-muo* in OLith. *sėmuõ* 'linseed', etc.

The least secure of these is type (4), which possibly represents nothing more than the Lithuanian substitution of the semiproductive masculine ending *-(m)uo* for **-mēn* (cf. OCS *sěmę*) or some other no longer extant neuter suffix. But the existence of types (1)–(3), all with reflexes in Slavic, may be taken as fairly certain.

The details are hard to recover.[99] All neuter *men*-stems have a nom.-acc. sg. in *-mę* < **-mēn*, which was originally proper only to the hysterokinetic type (3).[100] There is good evidence for an AP a group, embracing not only the historical

98 Despite the fact that, like many former consonant stems, it retains its consonant-stem gen. pl. (*debesų̃*).

99 Stang (1957) identifies the usual three types, but the only word he establishes for AP b, **plemę̀* 'tribe', is of unclear background and etymology (< **pled-men-*?). Important post-Stang studies are Snoj 1993 and Pronk 2009.

100 In view of the lack of consensus on this point, it deserves to be stated with some emphasis that **-(m)ēn* is the only viable reconstruction for this ending. There were no PIE nominatives, singular or plural, in **-ĕn*, **-ŏn*, **-ĕr*, or **-ŏr*. Hysterokinetic and amphikinetic animates with a full-grade suffix in the nom. sg. originally added an **-s* to this form, giving **-ēn*, **-ōn*, **-ēr*, or **-ōr* by Szemerényi's Law; hysterokinetic and amphikinetic neuters, which were all collectives (> "neuter plurals"), added an **-h₂*, likewise producing length. Even if **-en* were morphologically defensible, it would not work on other grounds: final nasals were lost after short vowels in Slavic, and an accented ending **-én* would have been

acrostatic stem PSl. **bě̋rmę* (BCS *brȅme* 'weight, load', R dial. *berémja* 'armful', etc.) < **bʰér-m-*, but also former proterokinetics like PSl. **sě̋mę*, pl. **sě̋mena* 'seed' (OR *sȇmja*, pl. *sȇmena*) < **séh₁-m-* and PSl. **známę*, pl. **známena* 'sign' (R *známja* 'banner', pl. OR *známena*) < **ǵnéh₃-m-*, in which the accent came to be fixed on an acute first syllable through analogical leveling or Hirt's Law. Looking beyond AP a, however, there is little consensus on how to distinguish AP b and AP c in the Slavic dialects, or on which stems should be assigned to each. The safest example of an old mobile *n*-stem, and the only one that will be discussed here, is the word for 'name', PSl. **jь̏men-* ~ **jь̀men-*. The original paradigm may have been hysterokinetic **h₁n̥h₃-mén*, gen. **-mn-és*, properly the internally derived collective (1.6.1) of an underlying proterokinetic **h₁néh₃-mn̥*, gen. **h₁n̥h₃-mén-s*.[101] Through the same analogical processes that led to the generalization of the full-grade suffix form **-men-* outside the nom.(-acc.) sg. in other Baltic and Slavic *n*-stems, the inherited hysterokinetic stem probably developed a simplified paradigm **Hn̥Hmén*, **Hn̥Hmén-*,[102] which then became the point of departure for the creation of the attested mobile forms. At the outset, SPL would have operated before vowel-initial endings, generating a left-marginal accent (**Hǹ̥Hmen-*) in some forms and leading to pressure for the word as a whole to conform to the regular mobile neuter curve. The nom.-acc. pl. thus became **jь̀menà*—not by sound change, but by analogy to nom.-acc. pl.'s of the types **męsà* and **nebesà*. In the singular, where retraction by SPL was regular or regularized in the oblique cases (starting perhaps with the loc. sg. **-mén-i*, **-mén-en*),[103] the nom. sg. **jь̀mę̀* < **-mȅn* would similarly have come under pressure to adopt the "regular" left-marginal accent of nom. sg. forms like **mę̑so* and **nȅbo*. And indeed, a root-accented nom. sg. is found in the majority of Slavic languages: cf. R *ímja*, gen. *ímeni*, pl. *imená*; BCS *ȉme*, gen. *ȉmena*, pl. *imèna* < *-à*. As against these, the isolated Ukrainian nom. sg. *imjá* may represent an archaism, the direct accentual continuant of PIE **h₁n̥h₃-mén*.

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subject to final **-V̆N(C)* retraction. Olander's claim (2015: 85 f.) that PIE **-im* and **-m̥* gave PSl. **-ь*, while **-in* and **-n̥* gave PSl. **-ę*, is phonetically improbable and ad hoc.

101 The collective of the word for 'name' would probably have denoted the aggregate of a person's name and patronymic or nickname(s); such a form could evolve either into an ordinary singular (as in Germanic; cf. Go. *namo* < **-ōm̥*) or an ordinary plural (as in Avestan; cf. GAv. *nāmąn* < **-ēn* (not < **-ōn*; cf. Jasanoff 1989: 138)).

102 with or without a third variant **Hn̥Hmn̥-* before heavy endings; the issue is the same as in the word for "daughter." Note that Hirt's Law, which ought to have taken **Hn̥Hmȇn* to **Hn̥Hmēn*, was overridden in this word, presumably by the same mechanism as in **suHnù̯s* and **ǵiHvò̯s* (4.1).

103 The endingless loc. sg., which served as the basis for the expanded loc. sg. in **-i* and **-en*, had full grade even in the hystero- and amphikinetic declensions; cf. Ved. *pitári*, Gk. *patéri* (hysterokinetic), Gk. *ai(w)én* 'always' beside *ai(w)ón* 'lifetime' (amphikinetic), etc.

5.5 Pronouns

5.5.1 *Demonstratives*

As seen in connection with the pronominal *o*-stem nom. pl. masc. in **-oi* and the *o*-stem nom.-acc. sg. nt. in **-od*, Balto-Slavic is one of the IE branches in which the inflection of pronouns had a major influence on the inflection of adjectives and, through adjectives, nouns. The monosyllabic demonstratives and other gendered pronouns were historically accented on the stem syllable.[104] Compare the masculine/neuter forms of BSl. **ta-* in Lithuanian and Slavic (the dual is omitted):

		Lithuanian	Slavic	
sg.	nom.	*tàs*	**tъ́*	(nt. **tò́*)
	gen.	*tõ*	**togò́*	
	dat.	*tám* (OLith. *tãmui*)	**tomù́*	
	acc.	*tą̃*	**tъ́*	(nt. **tò́*)
	instr.	*tuõ* (*túo*)	**těmь́*	
	loc.	*tamè*	**tomь́*	
pl.	nom.	*tiẽ* (*tíe*)	**tî*/**tě̂*	(nt. **tâ*)
	gen.	*tų̃*	**těxъ́*	
	dat.	*tíems* (OLith. *tíemus*)[105]	**těmъ́*	
	acc.	*tuõs* (*túos*, *tùs*)	**tŷ*	(nt. **tâ*)
	instr.	*taĩs*	**těmí*	
	loc.	*tuosè*	**těxъ́*	

The final accent in the Lithuanian locatives (*tamè*, *tuosè* < **-ēn*) is due to Saussure's Law; the disyllabic Slavic forms have final accent by Dybo's Law. In Lithuanian the nom. pl. was acute (cf. Latv. *tiẽ*), as were the acc. pl. and instr. sg. Like all underlyingly acute monosyllables, the accentuation of these forms had to be adjusted to conform to the Lithuanian ban on acute final syllables.

The most interesting Slavic forms are the circumflex but historically acute monosyllables—nom. pl. **tî*/**tě̂* < Proto-BSl. **tái*, acc. pl. **tŷ* < Proto-BSl. **tṓ*(*n*)*s*, and nom.-acc. pl. nt. **tâ* < Proto-BSl. **tā́* < **téh₂*. Several possible ways come to mind for how to explain these: (1) Rasmussen's rule of monosyllabic circumflexion (3.4.5); (2) Meillet's Law, on the assumption that the paradigm was once mobile or subject to the influence of forms that were; and (3) grammaticalized

104 Cf. ch. 2, note 45. The columnar accent of disyllabic pronouns like Lith. *anàs* 'that one' (*anõ*, *anám*, *anų̃*, etc.), which ought to have been converted to mobility by SPL, is imitative of the monosyllabic stems.

105 With acuteness taken from the nom. pl.

expressive lengthening along the lines discussed in 3.4.5. Of these, Rasmussen's rule is too doubtful to be considered further. Meillet's Law cannot help either, since neither the Slavic or Lithuanian paradigms were in fast originally mobile (despite Dybo 1981: 35 ff.). As for the possibility of analogical influence from a genuinely mobile source, the potentially relevant personal pronouns likewise have a circumflex in their monosyllabic forms, but these too, as we shall see, were originally immobile.

This leaves the third possibility, expressive lengthening. As discussed in ch. 3, pronouns have a wide variety of discourse functions, in some of which (e.g., in deictic or contrastive use) expressive features are apt to become grammaticalized. Monosyllabic pronouns are crosslinguistically susceptible to discourse-related lengthening. In early Balto-Slavic, where the "checked" component of acuteness signaled precisely the *absence* of extra length (3.2.1), the discourse-related lengthened forms of **tȧ̱i̱* (nom. pl.), **tȯ̱̍(n)s* (acc. pl.), and **tȧ̱̍* (nom.-acc. nt. pl.) would simply have been realized as non-acute **tȧi*, **tȯ́(n)s*, and **tȧ̍*. This type of accent in Slavic would under normal circumstances—that is, in words of more than one syllable—have been shifted rightwards by Dybo's Law. But in monosyllables, the lexical accent on a non-acute long vowel, having no place to move, was realized as falling, thus merging phonologically with the circumflex resulting from the left-marginal accent. The result was **tî*/**tȅ*, **tŷ*, **tâ*. Nom. pl. **tî*/**tȅ* is a close typological cousin to Ger. *die* (cf. ch. 3, notes 62, 64).

5.5.2 *Personal Pronouns*

The numerous special difficulties associated with the segmental reconstruction of the Balto-Slavic personal pronouns need not concern us here.[106] On the Baltic side, we find the same array of quantitatively and intonationally variable monosyllabic forms that suggested the idea of expressive lengthening in the first place: 2 sg. OPr. *toū* (acute) vs. Latv. *tu* (short); 1 pl. Latv. *mẽs* (long acute) vs. OPr. *mes*, Lith. *mẽs* (short); 2 pl. OPr. *ioūs*, Latv. *jũs* (acute) vs. Lith. *jũ̃s* (circumflex). Slavic is more uniform, with a series of circumflex monosyllables: 1 sg. acc. **mę̂*; 2 sg. nom. **tŷ*, acc. **tę̂*;[107] 1 pl. nom. **mŷ*, acc. **nŷ*; 2 pl. nom.-acc. **vŷ*; 1 du. nom. **vȅ*, acc. **vâ*; 2 du. nom.-acc. **vâ*. To understand the position of these forms we must see how they pattern morphologically. In the plural and dual the rest of the paradigm is disyllabic and acute:

106 Kapović 2006a is indispensable for the data and contains many original interpretations. Olander 2015 gives an up-to-date survey of the literature.

107 On **mę̂* and **tę̂*, which are hard-won from the evidence, I follow Kapović 2006a: 39–54.

	1 pl.	2 pl.	1 du.	2 du.
nom.	**mŷ*	**vŷ*	**vě̊*	**vâ*, **vŷ*
gen.	**nášʒ̨*	**vášʒ̨*[108]	**náju*	**váju*
dat.	**námʒ*	**vámʒ*	**náma*	**váma*
acc.	**nŷ*	**vŷ*	**nâ*	**vâ*
instr.	**námi*	**vámi*	**náma*	**váma*
loc.	**násʒ*	**vásʒ*	**náju*	**váju*

Superficially, these forms appear to be mobile, with a left-marginal accent in **mŷ*, **vŷ*, etc. alternating with an underlying final accent seemingly drawn leftward by Hirt's Law (as if **násʒ* < **nasʒ̨*, etc.). The situation thus descriptively recalls nom. pl. **gôlvy* beside loc. pl. **golvášʒ*, and in a purely synchronic sense the circumflexes in **mŷ*, **vŷ* can be said to be "explained" by Meillet's Law, the rule that mandates circumflex **gôlvy* instead of acute **gőlvy*. But this tells us nothing about their history. The historical Meillet's Law was a sound change that deleted acuteness in the presence of a left-marginal accent in Slavic, and it is not obvious how or why a left-marginal accent (i.e., /ˋ/) would ever have arisen in a monosyllabic pronoun.[109] In any case, the putative parallel between acute **násʒ*, **vásʒ*, etc. and **golvášʒ* is specious. In **golvášʒ* the accent is penultimate because the pre-BSl. sequence **-aHsu̯* contained a laryngeal that induced Hirt's Law. In **násʒ*, **vásʒ* < **nōs-*, **u̯ōs-*, where there was no laryngeal, there was also no phonologically regular Hirt's Law;[110] the accent must have been on the root from the beginning, as confirmed by Baltic forms like gen. pl. Lith. *mū́sų*, *jū́sų*, Latv. *mũsu*, *jũsu*, OPr. *noūson*, *iouson*.[111] The obvious conclusion is that, as in the case of **tî*, **tŷ*, and **tâ*, the Slavic circumflex forms are the grammaticalized expressively lengthened variants of Balto-Slavic monosyllables whose acute versions (e.g., Latv. *jũs*, OPr. *ioūs* ≠ Lith. *jū̃s*) are still attested in Baltic.

108 Neo-Štokavian dialects of BCS have a circumflex in the gen.-loc. form (*nâs*, *vâs*), which Stang (1957: 106), followed by Dybo (1981: 35), attributes to the metatony proper to the gen. pl. Kapović (2006a: 58) argues otherwise.

109 An *analogical* left-marginal accent, to be sure, was generated in mobile root nouns, where the root-accented forms that should have come out with a lexical accent surface with a circumflex. But here there was an overt mobile paradigm with oxytone weak cases. Cf. note 52.

110 I take the "stems" **nā-* and **vā-* to have been abstracted from Balto-Slavic analogues of Lat. *nōs*, *uōs*; these were themselves lengthened from short-vowel forms comparable to Ved. *naḥ*, *vaḥ*. A devil's advocate might claim that there was an etymological laryngeal in the dual forms (**noH-*, **u̯oH-*), and that Hirt's Law was extended from the dual to the plural. But this does not seem particularly attractive.

111 The *m*-cases of these pronouns, on the other hand (Lith. *mùm*(*u*)*s*, *mumìs*; *jùm*(*u*)*s*, *jumìs* etc.), seem to have been remade on the model of the *u*-stems (Stang 1966: 256, citing Endzelīns 1923: §351).

The situation is fundamentally the same in the singular pronouns. Here, however, the disyllabic and longer forms have a short vowel that rendered them susceptible, *inter alia*, to Saussure's Law in Lithuanian (e.g., acc. sg. *manè*, *tavè* < *-ēn) and—if this is the origin of the dialectal accentuation **menė́*, **tebė́* (gen.), **menḗ* (**mьnḗ*), **tebḗ* (dat.)—to Dybo's Law in Slavic.[112] The nom. sg. of the 1 sg. pronoun is particularly rich in surface variants. Kapović, in an interesting discussion (2006a: 34–7), traces the diversity to two PIE byforms, 1) **éǵ* (*vel sim.*), whence Lith. *àš* < *eš* (= Latv. *es*, OPr. *es*) and the PSl. "short" form **jā́*;[113] and 2) **eǵHóm*, whence the Proto-Slavic longer variant **jãzъ* < **jazь̀*, with neoacute. If **jãzъ* really came from **eǵHóm* it would be a counterexample to final **-V̌N*(*C*) retraction, since final **-V̌N*(*C*) retraction ought to have converted pre-BSl. **ēźóm* (< **eǵHóm*) to Proto-BSl. **ẽ̀źan* > PSl. **jâzъ*, with a circumflex. But it is not necessary to set up another PIE preform to explain PSl. **jãzъ*. A simpler alternative would be to assume that pre-Slavic had acute and non-acute (< lengthened) variants **ḗz* and **ēz*, which gave rise to longer byforms **ḗzъ* and **ēzъ* at the time of the loss of final obstruents in Slavic. (For the final support vowel compare OCS *otъ* 'from' (< **ot*) or the OCS 3 sg. in *-tъ* (< apocopated **-t'*).) The second of the disyllabic variants thus produced, **ḕzъ*, would regularly have given Kapović's preform **jazь̀* by Dybo's Law. And there may be a still more prosaic explanation: as acute (= long rising) vowels were beginning to shorten over most of the Slavic area in the last centuries of Slavic unity, the incipiently shortening pronoun **jā́*(*zъ*), still with rising tone, was expressively re-lengthened, taking on the "new" long rising intonation that we know as the neoacute.

5.6 Valency

5.6.1 *Dominant vs. Recessive*

In the well-known synchronic description of Proto-Slavic accentual morphophonemics canonically presented in Dybo 1981, all morphemes are assigned

112 According to Kapović 2006a: 80, Slovenian, Middle Bulgarian, and some dialects of BCS have final accent in the genitive and dative, while Old Russian and other dialects of BCS have initial accent, as if the paradigm were mobile. A small residue of Croatian dialects have final accent in the genitive but root accent in the dative; this is, of course, the normal pattern in non-*o*-stem mobile nouns. As typically in pronouns, conflicting analogical forces have been at work. I can find no serious evidence to contradict the default assumption that the paradigm was originally barytone throughout.

113 The Baltic forms are from a devoiced sandhi version; Slavic shows regular lengthening by Winter's Law.

"dominant" (+) or "recessive" (-) valence, and long nuclei may also be acute or non-acute. The surface accentuation of an inflected word form depends on a two-step computation:

> (1) the leftmost dominant morpheme, if there is one, receives the accent; otherwise no accent is assigned, and the form becomes an enclinomenon;
>
> (2) an accent on a non-acute vowel is advanced one syllable to the right if possible (Dybo's Law), and an accent preceded by an acute long monophthong is retracted one syllable to the left (≅ Hirt's Law).[114]

Thus, in an AP b noun like PSl. **ženà*, the root is dominant, the stem vowel (in the heavy cases) is recessive and acute, and the endings are variable. The forms all undergo Dybo's Law:

> nom. sg. **žen*$_{[+]}$-*a*$_{[+]}$ > **žèna* > **ženà*
> acc. sg. **žen*$_{[+]}$-*ǫ*$_{[-]}$ > **žènǫ* > **ženǫ̀*
> instr. pl. **žen*$_{[+]}$-*a*$_{[-]}$-*mi*$_{[+]}$ > **žèn<u>a</u>mi* > **ženā́mi*

In AP c **golvà* the root is recessive:

> nom. sg. **golv*$_{[-]}$-*a*$_{[+]}$ > **golvà*
> acc. sg. **golv*$_{[-]}$-*ǫ*$_{[-]}$ > **gôlvǫ*
> instr. pl. **golv*$_{[-]}$-*a*$_{[-]}$-*mi*$_{[+]}$ > **golv<u>a</u>mì* > **golvā́mi*

In the pair AP a **vȍrna* 'crow' and AP c **vôrnъ* 'raven', the root is dominant and acute in the first and recessive and non-acute in the second:

nom. sg. **v<u>or</u>n*$_{[+]}$-*a*$_{[+]}$ > **vȍrna*	**vorn*$_{[-]}$-*ъ*$_{[-]}$ > **vôrnъ*
acc. sg. **v<u>or</u>n*$_{[+]}$-*ǫ*$_{[-]}$ > **vȍrnǫ*	**vorn*$_{[-]}$-*ъ*$_{[-]}$ > **vôrnъ*
instr. pl. **v<u>or</u>n*$_{[+]}$-*a*$_{[-]}$-*mi*$_{[+]}$ > **vȍrnami*	**vorn*$_{[-]}$-*y*$_{[+]}$ > **vornỳ*

Lithuanian has a similar system, save that here there are no enclinomena, and the default initial accent assigned to "accentless" forms is the same as any other accent—acute when the initial syllable is marked for acuteness, non-acute otherwise.

Dybo's approach is closely related to Garde's analysis of Slavic accentuation (1976) and the classical generative analyses of Halle and Kiparsky (cf. 1.7.1); all

114 Hirt's Law as a sound change, of course, was triggered not by acute long monophthongs, but by tautosyllabic **-VH-* sequences.

are indebted to Jakobson 1963. Putting aside specific analytic and theoretical choices, it is an entirely convincing and intuitively satisfying framework for what it sets out to be. But, as emphasized in ch. 1 and implicitly throughout this book, the problem of producing a descriptive analysis of a set of facts—even a descriptive analysis with a plausible claim to psychological reality—is distinct from the problem of accounting for how those facts came about. Regardless of whether PIE can be insightfully characterized in dominant vs. recessive (= Kiparsky's "accented" vs. "unaccented") terms, the PIE and Proto-BSl. systems do not map into each other in any obvious way. PIE did not have acuteness, mobile *o*- and *ā*-stems, or mobile thematic presents, and the strong and weak endings of PIE morphology do not, in general, correspond to the strong and weak endings of Lithuanian or Slavic. In the preceding pages a sound-change-and-analogy-based model has been proposed to account for the rise of valency in its distinctive BSl. form, chiefly in the realm of noun inflection. Under this account, the roots that Dybo calls "dominant" in a given nominal paradigm are historically roots that bore the accent in that paradigm in late PIE/early pre-BSl., and the roots that Dybo calls "recessive" are roots that acquired a left-marginal accent by SPL/final **-V̌N(C)* retraction. Dominant endings are endings that failed to trigger this rule, or that acquired the accent after Proto-VDL; other endings became recessive.

5.6.2 *Secondary Derivatives*

The beauty of the dominant/recessive principle as applied to Slavic is that, to a degree unheard of in the "classical" IE languages, it also determines the accentual behavior of secondary nominal derivatives. Derivational suffixes in Proto-Slavic may be dominant or recessive in the same way as case endings. Thus, the adjectival suffix **-ьn-ъ*, fem. **-ьn-a* (< Proto-BSl. **-in-a-*, fem. **-in-ā* < PIE **-ino-*, **-ineh$_2$*) and the abstract-forming suffix **-ot-a* (< Proto-BSl. **-at-ā* < **-e/oteh$_2$*) differ in valency; the former is recessive (**-ьn$_{[-]}$-ъ$_{[-]}$*, fem. **-ьn$_{[-]}$-a$_{[+]}$*) and the latter is dominant (**-ot$_{[+]}$-a$_{[+]}$*). The difference is purely notional when these suffixes are added to a nominal stem of AP a, i.e., a stem with a dominant acute root syllable. The derivatives here have stable accent on the root in both cases, because the root is the leftmost dominant morpheme:

base	**derivative**
**vě̱r$_{[+]}$-a$_{[+]}$* (= **vě́ra* (AP a) 'faith')	**vě̱r$_{[+]}$-ьn$_{[-]}$-ъ$_{[-]}$* (= **vě́r-ьnъ*, fem. **vě́r-ьna* 'faithful')[115]
**čis̱t$_{[+]}$-ъ$_{[-]}$* (= **čístъ* (AP a) 'pure')	**čis̱t$_{[+]}$-ot$_{[+]}$-a$_{[+]}$* (= **číst-ota*, acc. **číst-otǫ* 'purity')

115 The examples in this section are taken from Lehfeldt 2009: 52 ff.

There is likewise no apparent difference in the behavior of the suffixes when the derivational base is a stem of AP b, i.e., a stem with a dominant non-acute root. Here, however, since the root is not acute, the accent is shifted one syllable rightwards by Dybo's Law in both the base and the derivative:

**grěx*$_{[+]}$*-ъ*$_{[-]}$ (= **grěxь* (AP b) 'sin') **grěš*$_{[+]}$*-ьn*$_{[-]}$*-ъ*$_{[-]}$ (= **grěš-ьnъ*, fem. **grěš-ьna* 'sinful')
**dobr*$_{[+]}$*-ъ*$_{[-]}$ (= **dobrь* (AP b) 'good') **dobr*$_{[+]}$*-ot*$_{[+]}$*-a*$_{[+]}$ (= **dobr-ȯta*, acc. **dobr-ȯtǫ* 'kindness')

The behavior seen in these forms was a general pattern in Proto-Slavic.[116] Whenever a derivational suffix is added to an immobile nominal stem (i.e., a stem of AP a or AP b), the derivative reproduces the accent of the base. The other IE languages—putting Lithuanian aside for the moment—are quite different. Outside Balto-Slavic, some suffixed formations, such as the Vedic adjectives in *-vant-* and the comparatives in *-tara-*, copy the accentuation of their base, but a larger number do not (cf. 1.6.2). Thus, the Vedic abstract-forming suffix *-tā* (*-atā*, *-utā*), which is cognate with PSl. **-ota* (in **čĭst-ota*, **dobr-ȯta*), is consistently pre-accenting; cf. *púruṣa-* ⇒ *puruṣátā*, *bándhu-* ⇒ *bandhútā*, etc. At some point in the prehistory of Slavic, the pattern of copying the initial accent of a derivational base onto its derivative must have been generalized from the cases where copying was inherited—the pre-Slavic analogues of adjectives in *-vant-* and *-tara-*—to *all* cases.

If we now turn to the case where the derivational base is of AP c, i.e., where the root is recessive, we find that the output is dependent on the valence of the *suffix*. If the suffix is dominant, as in the case of **-ota* (*-ot*$_{[+]}$*-a*$_{[+]}$) or the acute feminine individualizing suffix **-ica* (*-i̯c*$_{[+]}$*-a*$_{[+]}$), the accent is assigned to the suffix. If the suffix is non-acute, the accent moves forward by Dybo's Law:

**slěp*$_{[-]}$*-ъ*$_{[-]}$ (= **slěp̂ъ* (AP c) 'blind') **slěp*$_{[-]}$*-ot*$_{[+]}$*-a*$_{[+]}$ (= **slěp-ȯta* > **-otȧ*, acc. **-otǫ́* 'blindness')
**mold*$_{[-]}$*-ъ*$_{[-]}$ (= **môldъ* (AP c) 'young') **mold*$_{[-]}$*-i̯c*$_{[+]}$*-a*$_{[+]}$ (= **mold-ĭca*, acc. **-ĭcǫ* 'young woman')

If, on the other hand, the suffix as well as the root are recessive, as in the case of **-ьn-ъ*, fem. **-ьn-a* (**-ьn*$_{[-]}$*-ъ*$_{[-]}$, **-ьn*$_{[-]}$*-a*$_{[+]}$) or the adjectival suffix **-ьsk-ъ*, fem. **-ьsk-a* (**-ьsk*$_{[-]}$*-ъ*$_{[-]}$, **-ьsk*$_{[-]}$*-a*$_{[+]}$) '-ish', the position of the accent is determined by the ending. If the ending is dominant, it receives the accent. If it is not dominant, then the form is an enclinomenon and receives a left-marginal accent:

116 It is no longer productive, however, in the modern languages, where, as in Lithuanian (see below), individual suffixes tend to be associated with specific valency-independent stress patterns. Cf. modern R *dobrotá*, *čistotá*, with the same final accent as in *slepotá* 'blindness' (: *slepój* 'blind', originally AP c).

*gor$_{[-]}$-a$_{[+]}$ (= *gorà (AP c) 'mountain') *gor$_{[-]}$-ьn$_{[-]}$-ъ$_{[-]}$- (= *gȏr-ьnъ; but fem. *-ьnà 'mountain-')
*zemj$_{[-]}$-a$_{[+]}$ (= *zemjà (AP c) 'land') *zemj$_{[-]}$-ьsk$_{[-]}$-ъ$_{[-]}$- (= *zȅmj-ьskъ; but f. *-ьskà 'terrestrial')

It is obvious that here, as in AP a and AP b, some kind of "copying" has occurred. But it is not obvious what exactly was copied. It could not have been mobility itself; if mobility itself had been copied, there would be no difference between the cases with recessive suffix (*gȏr-ьnъ, *zȅmj-ьskъ), which are mobile in the traditional sense, and those with dominant suffix (*mold-ĭca, *slĕp-otà), which are not.

5.6.3 *The Derivational Accent Rule*

The intimate accentual link between a nominal stem and its derivatives, one of the most characteristic features of Slavic, was a BSl. development. Lithuanian, which, like the later Slavic languages, has mostly adopted a system where individual suffixes determine their own accentuation, retains clear traces of Slavic-type accent-copying rules. The functional counterpart of PSl. *-ьnъ in Lithuanian is *-inis* (< *-iniu̯o-; dominant), which is accented as in Slavic: *dienà* (mobile; 4) 'day' ⇒ *dienìnis* 'diurnal', but *dvasià* (immobile; 2) 'spirit' ⇒ *dvãsinis* 'spiritual' (Senn 1966: 325). The rule is also alive in the denominal agent nouns in *-ininkas* (dominant); cf. *dárbas* (mobile; 3) 'work' ⇒ *darbiniñkas* 'worker', but *ū́kis* (immobile; 1) 'farm' ⇒ *ū́kininkas* 'farmer'. In Old Lithuanian (Daukša), the adjectives in *-iškas* '-ish' have fixed initial accent in cases of the type *výriškas*, fem. *výriška* 'masculine' (: *výras* (1) 'man'), but syllable-skipping mobility, exactly as in Slavic *zȅmjьskъ, fem. *-ьskà, in cases of the type *diẽviškas*, fem. *dieviškà* 'divine' (: *Diẽvas* (4)).[117]

These facts, both in Lithuanian and in Slavic, find their explanation in an analogical development that can be posited for a stage of Balto-Slavic prior to SPL and the rise of mobility:

> Nominal derivatives took over the location of the accent from their derivational base. If the base had initial or fixed medial[118] accent, this was copied by its derivatives. If the base had stem-final accent, this too was copied by its derivatives.

117 Note the contrast with Greek, where *-ískos* is among the few suffixes with underlying accent on the penult: *basilískos* 'chieftain, little king', *asterískos* 'little star', *paidískos* 'little boy', etc.

118 The phrase "fixed medial accent" is added to cover the case of trisyllabic and longer inputs in which, for whatever reason, the accent stood on an internal syllable. Many of these words would have been lexicalized derived nouns of the type PSl. *lopā́ta 'shovel', *kopȳto 'hoof', Lith. *perkū́nas* 'thunder', etc., all with petrified suffixal material.

We will call this the **Derivational Accent Rule (DAR)**. The part of the rule that deals with initially-accented forms is straightforward and has been discussed already. The "new" part of the rule is the claim of a complementary process at the end of the word—that starting from inherited cases like Ved. *putrá-* 'son', diminutive *putraká-*, where an oxytone derivational base happened to be combined with an oxytone suffix, Balto-Slavic framed a principle that *all* derivatives of oxytone nouns were oxytone. To see how this would have played itself out in the actual languages, let us return to a pair of words briefly discussed in the last chapter, the adjective **g^{u}ih$_3$u̯ó-* 'alive' and its derived abstract in **-teh$_2$*. The behavior of the suffix **-teh$_2$* in Vedic and Germanic (Go. *-iþa* < **-étā*) tells us that the derived noun meaning 'life' would at the PIE level have been accented **g^{u}ih$_3$u̯ó-téh$_2$* (or **-é-teh$_2$*). This preform, had it developed phonologically, would have given Proto-BSl. ***gi̯vatā̀* by SPL, whence Lith. **gývata*, gen. **-atõs* (3).[119] But this is not the form we find. The actual Lithuanian form is *gyvatà*, gen. *gyvãtos* (2), pointing to a pre-Saussure's Law base form **gi̯vȧtā́*, gen. **gi̯vȧtās*, with fixed accent on the medial syllable. We can see the creation of this form as a three-step process:

(1) In accordance with the DAR, inherited **g^{u}ih$_3$u̯ó-teh$_2$*, gen. **-ó-teh$_2$-es* was remade to **g^{u}ih$_3$u̯o-téh$_2$*, gen. **-o-téh$_2$-es*, copying the oxytonicity of the underlying adjective;

(2) nom. sg. **g^{u}ih$_3$u̯o-téh$_2$* developed phonologically to pre-BSl. **gi̯vatā́*, but SPL applied in the gen. sg. **g^{u}ih$_3$u̯o-téh$_2$-es*, giving retracted **giHu̯ŏtaHas* > **gi̯vȧtās* (cf. 4.4.1)

(3) the impermissible (because not bilateral) alternation pattern nom. **gi̯vatā́*, gen. **gi̯vȧtās* was leveled to **gi̯vȧtā́*, gen. **gi̯vȧtās*, with fixed medial accent, whence the attested forms.

The corresponding noun in Slavic is the *o*-stem **žívotъ*, *-ȧ* (AP b) < pre-Dybo's Law **žívȯtъ*, *-a* < Proto-BSl. **gi̯vȧta-*. Notwithstanding the difference of stem vowel, the history was the same as in the *ā*-stem.

The leveling of the "internal" alternation between BSl. **-ȧt-* (e.g., in the gen. sg.) and **-at-* ˈ (e.g., in the nom. sg.) in favor of the variant with accented suffix (**-ȧt-*) was the event that made the suffix **-ot-* "dominant" in the later grammar of Slavic. All dominant suffixes arose in this way, regardless of their accentual properties at the PIE level. Thus, e.g., the diminutives in BSl. **-ka-* started with

119 With final accent in the gen. sg. by Proto-VDL (**gyvatõs* < **giHvotaHȧs* < **gi̯HvotaHas*). Recall that Hirt's Law was analogically overriden in this word (4.1).

a very different profile from the abstracts in *-tā̱*, being historically oxytone. In Balto-Slavic, this difference was erased. The diminutive of **suHnú-* 'son', going into Balto-Slavic, was **suHnu-kó-*, not because this was its PIE accentuation (although, by chance, it probably was), but because *all* derivatives of the oxytone noun **suHnú-* became oxytone by the DAR. As in the case of **gᵘ̯ih₃u̯o-téh₂*, the inflection of the stem **suHnu-kó-* led to end-accented forms (e.g., nom. sg. **sū̱nukȧs*) alternating with forms that had acquired an internal accent by SPL (e.g., gen. sg. **sū̱nu̍kā* < **suHnŭkoHa(t)* (*vel sim.*) < **-kȯ-h₂ed*). Here too, the impermissible alternation (**-u̍k-* ~ **-uk-*ˈ) was leveled in favor of the variant with internal accent. The result in the attested languages is a dominant suffix (Lith. *sūnùkas*, *-ùko*; PSl. **synъkъ̀*, **-ъkȧ* < pre-Dybo's Law **synъ̀kъ*, **-ъ̀ka*).[120]

As we have seen, however, it was not a foregone conclusion that the analogical process that generalized **-ȧt-* and **-u̍k-* over **-at-*ˈ and **-uk-*ˈ would take the direction it took. In principle, the oxytone forms could have been favored instead. This is what in fact happened, e.g., in the adjectives in **-ino-* and **-iško-*. At the outset, the nom. sg. of an adjective in **-ino-* or **-iško-* would have been oxytone, and the gen. sg. would have had internal accent on the penult by SPL (**-ı̀nā*, **-ı̀škā*), exactly as in the case of the examples just discussed. But in the case of **-ino-* and **-iško-* the oxytone forms were maintained and the forms with internal accent eliminated. In theory, this could have resulted in a consistently oxytone paradigm (i.e., **-inȧs*, **-inā̍*, **-inū̍i*, **-inȧn*, etc.). But wholly oxytone paradigms, apart perhaps from a few pronouns, were likewise impermissible in the aftermath of SPL. *All* originally oxytone nouns and adjectives became mobile in emergent Balto-Slavic, either in the "standard" bilateral way familiar from disyllabic nouns, or—temporarily—in the "internal" way that was now systematically eliminated. When internal mobility was not eliminated by fixation of the accent on the penult, it was eliminated by conversion to true bilateral mobility, with the accent skipping over interior syllables. Alternating **garinȧs*, gen. **garı̀nā* and **deiviškȧs*, gen. **deivı̀škā* thus became **garinȧs*, gen. **gȁrinā* (cf. PSl. **gȍrьnъ*, fem. **gorьnȧ*) and **deiviškȧs*, gen. **dȅiviškā* (cf. Lith. *diẽviškas*, fem. *dieviškà*), respectively, with alternating initial and final accent. This was the mechanism by which "recessive" suffixes arose.

There was thus no inherited etymological difference between dominant and recessive suffixes. Historically speaking, both types accented the ending

120 As a point of interest, internal mobility of the prohibited type is actually occasionally attested in Old Lithuanian (e.g., acc. sg. masc. *numirúsi* 'dead', gen. pl. *numirusių́*; cf. Stang 1966: 459) and dialectally (*ibid.* 143). As correctly seen by Stang, however, these forms are not of BSl. date. They became possible in Lithuanian with the merger of the lexical and left-marginal accents—a later event than the separation of Lithuanian from Latvian.

when added to oxytone stems, and both were associated with "internal" (i.e., final ~ penultimate) mobility in the immediate aftermath of SPL. A dominant suffix was one that replaced internal mobility by fixed accent on the penult; a recessive suffix was one that replaced it by full bilateral mobility.[121]

5.6.4 *Valency: Summary*

It should now be clear why the notion of valency, so indispensible to describing the synchronic morphophonemics of the accent in Slavic and (to a lesser extent) Lithuanian, has played so modest a role thus far in our account of the emergence of Balto-Slavic from PIE. Whether or not the synchronic workings of the PIE accent can or should be described in compositional terms, the BSl. form of valency differed as much from what may have passed for valency in PIE as the BSl. form of mobility differed from PIE mobility. And indeed, these two phenomena—valency and mobility—have been understood and misunderstood in parallel ways. We have earlier seen how BSl. mobility, lacking an obvious internal source, led an influential body of scholars—first Meillet, then Stang, then Dybo and his school—to take the extreme step of projecting it back into PIE. In the same spirit, the Moscow School takes BSl. valency to be inherited as well, tracing "dominant" and "recessive" to separate tonal registers in PIE.[122] But this is a huge and methodologically unjustified leap. It is never good practice to look for an "IE" solution until the shorter-term alternatives have been exhausted, especially when the proposed revision to the protolanguage is of a typologically transformative character. We have seen in the preceding pages that like mobility, with which it co-evolved, valency in Balto-Slavic was not in any interesting sense the continuation of a PIE feature. It was an emergent effect of normal sound change, above all SPL, and analogy, above all the Derivational Accent Rule and the elimination of internal mobility.

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121 It is unclear what made a given suffix "opt" to be dominant or recessive. In Slavic, at least, there is a discernible tendency for noun-forming suffixes (e.g., post-Dybo's Law **-ĭ́na*, **-ĭ́ca*, **-ьnikъ̀*, **-ьstvò*, **-otà*) to be dominant and for adjectival suffixes (e.g., **ˋ-ьskъ* : **-ьskà*, **ˋ-ьnъ* : **-ьnà*, **ˋ-ęnъ* : **-ęnà*, **ˋ-ovъ* : **-ovà*) to be recessive. But there are exceptions in both directions.

122 Olander (2009: 34) gives the following quote from Dybo, Zamjatina, and Nikolaev 1990: 107 f.: "Behind the abstract "pluses" and "minuses" lie some hitherto unknown prosodic realia; and during the Balto-Slavic period these realia were still to a large extent phonetic, coexisting with the acute and circumflex intonation (or other prosodic characteristics reflected by these intonations). We are very close to proving that the Balto-Slavic accent system reflects an Indo-European opposition of two phonological tones (registers)." Kortlandt's older views on this topic are expounded in Kortlandt 1986; in more recent publications, notably Kortlandt 2012b, his position seems closer to the one taken here.

CHAPTER 6

Mobility in the Verb

The verb, accentologically speaking, has traditionally been treated as a poor relation of the noun. The reasons have already been discussed (cf. 4.3.1). The verbal systems of Baltic and Slavic are less strikingly alike than their nominal systems. Lithuanian, a faithful guide in matters concerning the noun, is a disappointment when it comes to the verb, partly because mobility in the Lithuanian verb has been reduced to vestiges, and partly because the Baltic verbal system as a whole is relatively innovative compared with that of Slavic. But Slavic, though theoretically more conservative than Baltic, is in some respects tantalizingly uninformative. Overshadowing all else is the fact that there is no anchoring "fundamental theorem" of the BSl. verbal accent as there is for the accentuation of nouns. In the noun, it has been known for over a century that mobility is historically related to oxytonicity. No such link between oxytonicity and mobility is discoverable in the verb; yet no other generally accepted principle has emerged to take its place.

The preliminary survey in ch. 4 sketched an approach to mobility in the verb that attributed the position of the accent in mobile paradigms to SPL and Proto-VDL, treating preverbs and preverbal particles as part of the domain of these rules.[1] That approach will be developed below. Inevitably, the focus will be on the present system, where abundant material is available in both branches.

6.1 Overview

Proto-Balto-Slavic had distinct present, aorist, and infinitive stems. In Baltic it is still necessary to distinguish all three, though the aorist has been replaced by the "preterite," a formally unrelated category. In Slavic, modern descriptive accounts usually operate with only a present and infinitive stem, but it is easy to recognize the remains of a three-term system below the surface.[2]

1 It may not be out of place to remind the reader that rules and technical terms introduced in chs. 2–5 are summarized in the Appendix immediately following ch. 7.

2 The question of how many distinct stems need to be recognized for an insightful analysis of the Slavic verb is a traditionally contested issue. Koch (1990: 117–41) gives an overview of the controversy through the late 1980's.

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The present stem underlies the present indicative and its participles in both branches, as well as the Lithuanian "permissive" and the Latvian and Slavic imperative, all historically continuing the PIE present optative. From the infinitive stem are formed the Baltic future, the etymologically unrelated imperfects of (East) Baltic and Slavic, and an assortment of deverbal nominals, including the infinitive itself, the supine, and, in Slavic, the ubiquitous *l*-participle. The form of the Slavic aorist and past participles can usually be predicted from the infinitive stem, but the Baltic preterite type (*ā-* or *ē-*) is not predictable and must be separately inventoried.

All verbal stems, in principle, may be mobile or non-mobile. Only in Slavic and (within obvious limits) Old Prussian, however, is mobility robustly displayed in the form of actual movement of the accent within a finite paradigm. In the case of the present stem, the basic facts have already been described (cf. 2.2.3.2, 4.3.1, 4.5.1; see further below). A mobile (AP c) present in Slavic has initial falling (i.e., left-marginal) accent in the 1 sg. (**vȅdǫ*) and final accent elsewhere (**vedešь*, **vedetъ*, **vedemъ*, etc.). As an enclinomenon, the 1 sg. "surrenders" its left-marginal accent to an accompanying preverb or preverbal particle when there is one (**nȅ vedǫ*, **prì-vedǫ*). In Lithuanian the final accent in mobile presents has been completely eliminated;[3] all finite present forms have in effect taken on the accentual properties of the 1 sg. We thus find initial accent everywhere except when disturbed by Saussure's Law (*vedù*, *-ì*; *vẽda*, *vẽdame*, etc.). We also find, despite the absence of a full-blown category of "enclinomena" in Lithuanian, retraction to a preverbal particle in all persons and numbers (*nèvedu*, *nèvedi*, *nèveda*, etc.)—a striking Baltic : Slavic isogloss, even though the retraction is encoded differently in the grammars of the two branches.[4] Both Lithuanian and Slavic retain overt mobility in the present participles of mobile presents, although the curves of the two paradigms are different (e.g., PSl. nom. sg. **vědy* ≠ Lith. *vedą̃s*; cf. 4.5.1).

A major difference between Lithuanian and Slavic is the fact that in Slavic the mobility of the present is "copied" by the infinitive, aorist, and related forms, so that a verb with a present of AP c also has an AP c infinitive (**vestì*, with final accent; contrast AP a **sȇ̋sti* 'to sit down'), and an AP c aorist (e.g., 1 sg. **vědsъ*; contrast AP a **sȇ̋dъ*). It is thus convenient to speak of mobile (AP c) and immobile (AP a, b, a/b)[5] *verbs* in Slavic. This is not a meaningful usage

3 But see 4.5.1 on the former 3 pl. *vedą̃* < **-antì*.

4 Cf. ch. 4, note 26. When the root is acute the accent is again drawn forward by Saussure's Law; cf., e.g., *áuga* 'grow(s)', **nèauga* > *neáuga*.

5 The classification "AP a/b" is useful for immobile verbs with roots ending in an acute diphthong (in the extended BSl. sense) or high vowel that resolves at syllable boundaries. In such

in standard Lithuanian, where the mobility of the preterite is independent of that of the present. Lithuanian likewise lacks a mobile : immobile distinction in the infinitive, differing in this respect not only from Slavic, but also, interestingly, Latvian, where the former place of the accent in the infinitive can be recovered from the contrast between sustained tone (e.g., *bãrt* (= Lith. *bárti*) 'to scold' < **bȧ̱rti* (: PSl. AP a/b **bőrti*)) and broken tone in acute roots (e.g., *dzeȓt* (= Lith. *gérti*) < **ge̱rtì* (: PSl. AP c **žertì* 'to devour'). In other respects too, Latvian sometimes preserves a more archaic state of affairs than Lithuanian, as will be noted in passing below.

In every BSl. language, the mobility or non-mobility of a given verbal form is to some extent predictable from more general phonological and morphological information. Modern Lithuanian has taken this tendency furthest. Here, e.g., with a few easily explainable exceptions, all simple thematic presents, all "light" presents in *-ia-*, and all *ē*-preterites are mobile; all "heavy" presents in *-ia-*, all nasal presents, and all *ā*-preterites are immobile; and so on. In Slavic the accentuation of verbs with presents in **-e/o-*, **-je/o-*, and **-ne/o-* is generally predictable when the root ends in an obstruent, but not when the root ends in a vowel, liquid, nasal, or glide. The treatment of the common BSl. present **ime/a-* 'take' in three of the languages illustrates the difference. Lithuanian has 3 p. *ìma*, *nèima*; mobility, indicated by retraction onto the particle, is automatic because all simple thematic presents are mobile. In Slavic, where mobility is *not* automatic in roots ending in a nasal, we find AP b (3 sg. pres. (post-Dybo's Law) **jьmètь* (AP b) > post-Stang-Ivšić's Law **jȕmetь* (= BCS (Čak.) *jȁmē*, Slov. *jáme*; cf. older R 2 sg. *vózmešъ*)).[6] The priority of the Slavic treatment is proved by OPr. *imma*, 1 pl. *immimai*, with the non-mobile gemination pattern (cf. 2.3.2). Latvian has no exact cognate.

6.2 Thematic Presents

The great majority of present stems in Baltic and Slavic are descriptively thematic—marked either by simple **-e/o-* or by an extended thematic suffix,

cases the location of the boundary determines whether a given form conforms to the AP a or AP b profile. Exx.: AP a **bőrti*, pres. AP b **borjètь* (*bo.rjè.tь*); AP b **sovắti* 'to shove', pres. AP a **sűjetь*; AP a **bíti* 'to beat', pret. pass. ptcp. AP b **bьjènь*.

6 The Slovenian and Čakavian forms show the neoacute on a vocalized yer; in the older Russian form ("mobilized" in modern Russian to *voz´mú*, *voz´mëš´*, etc.) the accent has been retracted from the yer onto the preverb. The type is discussed by Stang (1957: 115–16).

e.g., **-i̯e/o-* and **-ne/o-*.[7] Other substantial morphological types are the "semithematic"[8] presents in **-ǐ-*, **-ā-* (both Baltic only), and **-ī-* (Slavic only). A handful of athematic root and reduplicated presents in Slavic, and a somewhat larger number in (older) Baltic, round out the picture.

6.2.1 *The Simple Thematic Type*

The most important locus of mobility in Balto-Slavic is the simple thematic type in **-e/a-* < PIE **-e/o-*. In Lithuanian, where all simple thematic presents are mobile, the type includes both clearly inherited words like *vẽda, nèveda*, ptcp. *vedą̃s* (: OIr. *fedid* 'goes'); *kẽpa, nèkepa*, ptcp. *kepą̃s* 'bake' (: Ved. *pácati*, Lat. *coquō* 'cook');[9] *dẽga, nèdega*, ptcp. *degą̃s* 'burn' (: Ved. *dáhati* 'id.'); *vẽža, nèveža*, ptcp. *vežą̃s* 'carry (by vehicle)' (: Ved. *váhati*, Lat. *uehō*, Go. *ga-wigan* 'id.'), etc.; and later thematizations and/or etymologically isolated cases like the just-discussed *ìma, nèima*, ptcp. *imą̃s* (root **h₁em-* 'take');[10] *šóka, nešóka, šoką̃s* 'dance' (no IE etymology); *peršà, nèperša, peršą̃s* 'woo' (root **prek-* 'ask');[11] and *kalbà, nèkalba, kalbą̃s* 'talk' (no IE etymology). Some of the inherited cases have exact cognates in Slavic, e.g., PSl. **vědǫ*, **-etь* = Lith. *vedù*, PSl. **pěkǫ, *pečetь* = Lith. *kepù*, PSl. **žę̀gǫ*, **žežetь* = Lith. *degù*,[12] and PSl. **vę̀zǫ*, **-etь* = Lith. *vežù*. Slavic naturally also has old thematic presents not found in Lithuanian, including several from non-obstruent-final roots, where mobility is not automatic. Here belong **bę̀rǫ, *-etь* 'take' (: Ved. *bhárati*, Gk. *phérō*, OIr. *berid*, etc.) and **žîvǫ, *-etь* 'live' (: Ved. *jī́vati*, Lat. *uīuō*, Toch. B *śaiṃ*), the latter matched by OPr. *giwa-* 'live' (2 sg. *giwassi, gīwasi, gīwu*; 3 p. *giwa, -e*), with the "mobile" profile (2.3.2).

6.2.1.1 *Explaining Mobility*

As I have written elsewhere, the history of attempts to account for the mobile accent pattern of primary thematic presents in Balto-Slavic does not make edifying reading. The mobile curve, with left-marginal accent in the 1 sg. (**vědǫ*) and final accent elsewhere (**vedešь*, etc.), was definitively established

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7 Here too belong the disyllabic thematic complexes "**-āi̯e/o-*" (= **-eh₂i̯e/o-*), "**-ēi̯e/o-*" (= **-eh₁i̯e/o-*), etc. These have little to tell us in the present context.

8 On the term see 6.3.

9 With Baltic metathesis for **pek-*

10 The root is well-known from other BSl. forms and from Lat. *emō* 'buy', but the apparent *tudáti*-present **h₁(ṃ)m-é/ó-* is an inner-BSl. creation.

11 The normal PIE present of **prek-* was **pr̥(ḱ)-ské/ó-* (: Ved. *pr̥cchā́ti*, etc.), not attested in Balto-Slavic.

12 With Slavic deformation of **deg/ž-* (or, more likely, pre-Sl. **deg/ǰ-*) to **žeg/ž-* (**ǰeg/ǰ-*).

by Stang. But Stang himself could find no better explanation for it than to suppose that thematic presents were mobile in PIE, with root accent in the singular (**u̯éd^{h}oh$_2$, *u̯éd^{h}esi, *u̯éd^{h}eti*) and final accent in the dual and plural (pl. **u̯ed^{h}omés, *u̯ed^{h}eté, *u̯ed^{h}ontí*). This idea is untenable, both for the same general reason as in nouns (*viz.*, the absence of mobile thematic stems anywhere else in the IE family), and for the more particular reason that the actual distribution of the left-marginal and final accents in verbs—Stang's own discovery—is badly at odds with his theory. But there are not many alternatives to choose from. An elaborate scenario is offered by Rasmussen 1992: 184 ff., who begins, rather inauspiciously, with an otherwise unmotivated BSl. version of Saussure's Law in the 1 sg. (**vèdō̯* > **vedō̯, vel sim.*) and assumes this to have given rise to an analogical paradigm with constant stress on the second syllable (**vedō̯, *vedèsi, *vedèti*, etc.). From the quasi-*tudáti*-present thus generated he posits separate Baltic and Slavic advancements and retractions, too implausible to merit being recounted in detail, to obtain the attested forms. Rasmussen's student Olander (2009: 194–8) simplifies his teacher's model by starting from actual *tudáti*-presents (he uses the example of **sup-é/ó-* (> Lith. *sùpa* 'rock(s)', PSl. **sъ̑pǫ, *-etь* 'spread out')), which he assumes lent their accentuation to full-grade presents of the *vede/a*-type. Since he does not assume SPL, he thereby obtains 1) trisyllabic forms of the type pre-Sl. **vedèti*, from which he generates **vedetь* by Dybo's Law; 2) disyllabic 2, 3 sg. aorist (< imperfect) **vedèt*, from which he generates **vẽde* by the Mobility Law; and 3) disyllabic 1 sg. pres. **vedō̯*, which he says became **vẽdǫ* under the influence of a lost Mobility Law-prone 1 sg. impf. in **-óm* [my notation]. As pointed out in ch. 4, note 27, none of this is really credible. *tudáti*-presents, though undeniably a PIE type, were so inconspicuous a formation vis-à-vis the full-grade "*b^{h}éreti*-type" in late PIE and early Balto-Slavic that it is hard to see how they could have imposed their accentuation pattern on the main bulk of thematic forms.[13] An important question not answered by either Rasmussen or Olander is why, if the locus of mobility was in *tudáti*-presents, the thematic nasal presents (e.g., Lith. 3 p. *tiñka* 'matche(s), fit(s)', PSl. **tьr(p)nǫ́* 'grow numb') and the

13 Olander (2009: 139) hesitantly suggests that the *b^{h}éreti*-type in Slavic actually gave AP b in Slavic, citing a small group of verbs with infinitives in **-ati* where Štokavian BCS and Czecho-Slovak have apparent AP b (e.g., Štok. *bȅrēm* (inf. *brȁti*) 'I take', *dȅrēm* 'I flay', *pȅrēm* 'I wash', etc.) in place of AP c in East Slavic and Bulgarian (cf. R *berú, -ëš′*, etc.). As he concedes, however, this is not the standard view. Stang (1957: 117) is doubtless correct in seeing in these forms the influence of the many AP b presents in *-je-* with infinitives in *-ati* (type **pišǫ́* 'I write', inf. **-ā́ti*).

Baltic presents in *-sta-*, which were likewise accented on the thematic vowel, are not also mobile.

The theory outlined in ch. 4 avoids these difficulties. It starts from precisely the stems where mobility is most firmly entrenched—**u̯éd^{h}e/o-, *pék^{u}e/o-, *d^{h}ég$^{u̯h}$e/o-, *u̯éǵ^{h}e/o-*, and the like—and makes their inherited accent, rather than the accent of a conjectural *tudáti*-present in the background, responsible for their mobility. Rasmussen and Olander's focus on *tudáti*-presents reflects the assumption of these scholars, made explicit in Olander's Mobility Law, that the phenomenon of mobility is everywhere a reflex of stem oxytonicity. The view taken here is that the left-marginal accent (/˘/) was a retraction product that came into being whenever the withdrawal of the accent from a short open syllable caused it to be positioned on the first syllable of a phonological word. Such a phonological word could be a case form of a suffix-accented noun, e.g., the nom. pl. of a disyllabic *ā-*, *i-*, or *u*-stem (**gă̱lvās* < **-ȧh$_2$es*, etc.); or it could be an initially-accented verbal form with a preverb or preverbal particle, e.g., 1 sg. **dă-vedō̱* < **do-u̯ėd^{h}oh$_2$*, 3 sg. **nĕ veźeti* < **ne u̯ėǵ^{h}eti*, 3 sg. impf. **pă-dege* < **po-d^{h}ėg$^{u̯h}$et*. In the latter case, the retracted sequences were potentially subject to Proto-VDL, producing the characteristic alternation between trisyllabic prefixed forms with left-marginal accent (1 sg. **dă-vedō̱*, 2–3 sg. aor. (< imperfect) **dă-vede*) and tetrasyllabic prefixed forms with final accent (**da-vedesėi, *-vedetı̀, *-vedamȧs* (*vel sim.*), **-vedetė, *-vedantı̀*). The Baltic evidence, such as it is—OPr. 2 sg. *gīwu* vs. 1 pl. *giwammai* and Lith. pres. ptcp. nom. pl. *vedą̃* (< **-antı̀*)—comports with that of Slavic.

It goes without saying that a major analogical component is needed to complete the picture. Non-compounded, non-negated thematic presents would never have developed a left-marginal accent by phonologically regular retraction, and would thus also never have acquired end-accented forms by Proto-VDL. If outcomes had been determined by sound change alone, the present **vede/o-* would have had separate "absolute" and "conjunct" accentual paradigms in Proto-BSl., the former associated with the verb when it stood alone and the latter with prefixed forms.[14] The two would have had markedly different outcomes in Slavic. The "conjunct" forms would have been **X̌-vedō̱, *-vedesėi, *-vedetı̀*, etc., with mobility developing as above, while the "absolute" paradigm, prior to Dybo's Law, would have been **vėdō̱, *vėdesei, *vėdeti*, etc., with fixed initial lexical accent. The "conjunct" forms would thus have been

14 These terms, which will be repeatedly used below, are borrowed from Old Irish, where finite verbs take the "absolute" endings when standing alone (e.g., 3 sg. *berid* 'carries', pl. *berait*) and the "conjunct" endings when preceded by a particle or preverb (e.g., *ni·beir* 'does not carry', *as·beir* 'says' (< *'brings out'), pl. *ni·berat, as·berat*).

directly ancestral to the attested mobile (AP c) paradigm (R [*vedú*],[15] *vedëš´*, etc.), while the "absolute" forms would have given an immobile (AP b) paradigm that is in fact nowhere to be found (post-Dybo's Law **vedǫ̀*, **vedèši*, etc. > post-Stang-Ivsić's Law **vedǫ̀*, **vèdeši*, etc., as if R **vedú*, **védeš´*, etc.). The analogical elimination of the absolute inflection must have taken place within the BSl. period. The loss of the absolute : conjunct contrast would have been hastened by the fact that, as we shall see below, no phonologically regular absolute : conjunct contrast developed in the present types in **-ǐ-*, **-ne/o-*, **-sḱe/o-*, and (in part) **-i̯e/o-* (6.2.2.3). The direction in which the leveling took place, with the compound forms setting the pace for the simplex, has many parallels.[16]

6.2.1.2 *The Accentuation of the Optative*

The rule that the disyllabic forms (**vědō*, etc.) of mobile thematic presents have left-marginal accent while the trisyllabic forms have final accent (**vedetì*, etc.) has several apparent exceptions outside the present indicative. The nom. sg. masc. of the present active participle, where Lithuanian has *vedą̃s* while Slavic has **vědy* (fem. **vedǫtjì*), has already been discussed (4.5.1). Slavic is more archaic in this case; Lith. *vedą̃s* was re-accented to conform to the normal rule for the nom. sg. masc. in mobile stems.[17] A more interesting example is the present optative. The optative became an imperative in Balto-Slavic, and remains so in Slavic (cf. OCS 2, 3 sg. *vedi*, 2 pl. *vedĕte*) and Old Prussian (2 sg. *wedais*, *weddeis*). In standard Lithuanian the continuant of the optative is the now old-fashioned "permissive"—in effect, a third person imperative consisting of the old 3 sg. optative preceded by the particle *te-* (e.g., *tevediẽ* (< **-ē̯* < BSl. **-ai*(*t*)) 'let him/her/them lead').[18] Dialectal Lithuanian also has 2 sg.

15 The 1 sg. in modern Russian (as also in BCS and Slovenian) has taken on the final accent of the other forms, but the original left-marginal accent is well attested in older accented texts and in Ukrainian dialects.

16 The principle is Kuryłowicz's Third Law of Analogy: "Une structure consistant en membre constitutif plus membre subordonné forme le fondement du membre constitutif, mais isofonctionnel" (Kuryłowicz 1949: 25). Beguš (2015) discusses an interestingly parallel case from the Prekmurje dialect of Slovenian and the Bednja dialect of Kajkavian BCS. He argues that the failure of an initial circumflex to advance to the second syllable in compound *l*-participles in these dialects (e.g., Bed. *nâobral* 'gathered' (< **nâ-bъralъ*), with retained initial circumflex) was due to the influence of cases where the presence of another particle (e.g., the negation *ne*) rendered the non-advancing circumflex word-internal.

17 The plural *vedą̃* < **-antì*, of course, is underlyingly trisyllabic.

18 The more usual locution is with the indicative (*tèveda*, etc.).

imperatives in *-ø*, *-i*, and *-ie*, all ultimately from **-ē̯* < **-ai(s)*; these are replaced in the standard language by forms with a particle *k(i)*, which substitutes for the *-ti* of the infinitive (*vèsk* 'lead!', pl. *vèskite*).[19]

The accentuation of the reflexes of the optative stands out in both branches. In Slavic, we might have expected that the disyllabic 2 sg. impv. would be accented **vě̀di*, with **vedě́tė̀* in the trisyllabic 2 pl. In fact, however, the forms are uniformly accented on the suffix, which is acute:

	sg.	pl.	du.
1	[—][20]	**vedḗmъ*	**vedḗvě*
2	**vedì*	**vedḗte*	**vedḗta*
3	**vedì*	[—]	[—]

Lithuanian has the accent on the suffix as well, though here the intonation is circumflex: *tevediẽ*, etc.; also *tegirdỹ* 'let him hear' (*ĭ*-pres.), *tesakaĩ* 'let him say' (*ā*-pres.), etc. The explanation for the unexpected suffixal accent in both branches lies in the fact that the thematic optative was formed with the uncontracted sequence **-o-ih$_1$-* in PIE, thus adding an extra syllable to the "stem" component of every form.[21] In the presence of a prefix the position of the accent would have been phonologically regular:

	2 sg.	**do-u̯éd^{h}o-ïh$_1$-s*	2 pl.	**do-u̯éd^{h}o-ïh$_1$-te*
SPL		**dŏ-u̯edo-ïH-s*		**dŏ-u̯edo-ïH-te*
Proto-VDL		**do-u̯edo-ḯH-s*		**do-u̯edo-ïH-tė̀*
Hirt's Law		**do-u̯edo-ḯH-s*		**do-u̯edo-ḯH-te*

19 In Latvian, the 2 pl. in *-iet* has both indicative and imperative functions in the majority of modern dislects, but is exclusively an imperative ending in the late seventeenth-century Bible translation of Glück (Endzelīns apud Stang 1966: 435).

20 The missing forms are suppleted by the particle *da* + the indicative.

21 Cf. 1.3.3 and the reference there cited. The extra-BSl. evidence for the disyllabic treatment comes from the failure of the optative sign *-e-* to resolve to *-ay-* before vocalic endings in Vedic (1 sg. *bháreyam*, 3 pl. *bháreyuḥ* for expected **bhárayam*, **-ayuḥ*) and the parallel failure of the optative suffix *-oi-* to give **-oi̯-* > **-o-* before vocalic endings in Greek (1 sg. *-oia*, 3 pl. *-oien*, mid.*-oiato* for expected **-oa*, **-oen*, **-oato*). The assumption of two historically independent analogical processes—one to restore the *-e-* in the 1 sg. and 3 pl. in Vedic, and the other to restore the lost *-i-* in the 1 sg. and 3 pl. Greek—is not a satisfactory explanation for these forms, which can be accounted for in every detail by starting from **-oïh$_1$m̥*, etc.

Here too the conjunct forms carried the day, giving Proto-BSl. *(-)*veda̤i̤*(*s*) and *(-)*veda̤i̤te*, respectively. The hiatal sequence *-*a̤i̤*- emerged with circumflex intonation in Lithuanian (-*iẽ*) but acute in Slavic, giving regular *-*i*$_2$ in 2–3 sg.**vedi*; cf. 2.2.6). It is the Lithuanian treatment that is "correct" in this case, as shown by the development of the identical sequence *-*o-ih*$_1$ to non-acute *-*ai* > *-*ě* in the nom.-acc. du. of *o*-stem neuters in Slavic (**kridlě*, etc.). The Slavic acute must have been an analogical import from athematic verbs (e.g., 2 pl. **dadíte* 'give!' < *-*dh*$_3$-*ih*$_1$-*te*) and from *ǐ*-presents, which were likewise historically athematic (e.g., **po-mьníte* 'remember!' < *-*m*(*n̥*)*n-ih*$_1$-*te*; cf. 6.3.2). In Lithuanian the opposite generalization took place: the non-acuteness of the thematic permissive in -*iẽ* was extended to the *ǐ*-presents (*tegirdỹ*).

6.2.1.3 *The Extension of the Mobile Pattern*

The mobility of the simple thematic type was phonologically regular in cases where the presence of a preverbal particle triggered SPL. For SPL to operate, however, the present stem had to contain an initial accented short open syllable. Stems like **u̯éd*^{h}*e*/*o*-, **u̯éǵ*^{h}*e*/*o*-, and **pék*^{u}*e*/*o*-, which are well-represented in both Baltic and Slavic, met these conditions. But the bulk of the mobile thematic presents that are actually attested could not have undergone retraction by the sound law version of SPL. Some have a long monophthong (e.g., Lith. *šóka*, ptcp. *šoką̃s*; PSl. *sě̂kǫ* 'cut'); others a diphthong or closed syllable (e.g., Lith. *keřpa*, *nèkerpa*, *kerpą̃s* 'trim'; *reñka*, *nèrenka*, *renką̃s* 'collect'; PSl. **stêrgǫ* 'guard', **prę̂dǫ* 'spin'); yet others originally accented the thematic vowel. Here as in the nominal system, where the accentuation of a declensional form is not always predictable from its IE shape, it is clear that morphology has, so to speak, trumped phonology. Beginning in the period of BSl. unity and continuing into the individual languages, mobility spread productively throughout the simple thematic type. The example of PIE **g*^{u}*íh*$_3$*u̯e*/*o*- 'live', which is mobile in both branches (cf. above), is instructive; a stem of this structure could never have undergone SPL *qua* sound change.[22]

In standard Lithuanian the extension of mobility in simple thematic presents has advanced to the point where all such forms are now mobile.[23] Slavic is more conservative. In roots ending in an obstruent, there are eleven exceptions to the general rule prescribing mobility: **vȓgǫ* 'throw', **lȅzǫ* 'climb, creep',

22 Since the root was **g*^{u}*i̯eh*$_3$-, of course, **g*^{u}*ih*$_3$*u̯e*/*o*- was not historically a simple thematic present at all. But it was everywhere treated as such, both in Balto-Slavic and the other IE languages.

23 For the indirect but broadly congruent evidence of Latvian, which will not be discussed in detail here, see Stang 1966: 455–8.

pādǫ* 'fall', **krādǫ* 'steal', **jĕdǫ* 'ride', **sędǫ* 'sit down', **bǫ̑dǫ* 'be (fut.)', **-rę̑t(j)ǫ* 'come upon(?)', and **lę̑gǫ* 'lie down', all AP a; and **mogь́* 'be able' and **jьdь́* 'go', both AP b. Of these, the forms with long acute roots would obviously never have been phonologically subject to SPL; this is particularly true of the four that are historically nasal presents (sędǫ, *bǫ̑dǫ, *-rę̑t(j)ǫ, *lę̑žǫ*). Of the two AP b cases that look like they *could* have been affected by SPL, **mogь́*, **-žèši*, **-žь́tь* is not historically thematic, but cognate with the Germanic preterito-present seen in Go. 3 sg. *mag*, pl. *magun* 'be able'. At the time of the operation of SPL the verb was probably still athematic, with a paradigm that blocked the rule (e.g., **màg-Hai, *-sei, *-ti*, etc., reflecting an older perfect). The present **jьdǫ́, *-èši, *-ь́tь* is a purely Slavic, and hence post-SPL, creation, generally thought to be based on the inherited 2 sg. imperative **h₁id^{h}í* 'go!' (= Ved. *ihí*, Gk. *íthi*).

The greater conservatism of Slavic is more systematically seen in the fact that the extension of mobility did not affect all root structures equally. While simple thematic presents built to obstruent-final roots, with the exceptions just noted, are always mobile, no such generalization can be made for roots ending in a liquid, nasal, or glide. A full account of the circumstances that determined whether a present of the form **CVR-e/o-* would come out mobile or immobile in Slavic has yet to be written.[24] What is clear is that the stronger the comparative evidence for the thematic inflection of a given stem in PIE, the likelier it is to be mobile in Slavic. It is thus no surprise that PSl. **bĕrǫ*, **beretь́*, an inherited thematic present with a short open root syllable, is mobile, while PSl. **ženǫ́*, **ženь́tь* (AP b) 'drive', thematized from the root present seen in Ved. *hánti* and Hitt. *kuenzi*, is not.

6.2.1.4 tudáti-*presents and Thematic Barytonization*

A number of simple thematic presents in Balto-Slavic have the structure of *tudáti*-presents. The history of these forms is important for the light it sheds on the accentual treatment of oxytone stems more generally.

tudáti-presents were briefly mentioned in 4.3.1 and 6.2.1.1 in connection with Olander's theory that presents of this type were the locus of mobility in the simple thematic class as a whole. Under our rules, *tudáti*-presents would not have come out either canonically mobile or canonically immobile. The display below shows how some typical di- and trisyllabic *tudáti*-forms would have been affected by SPL and Proto-VDL:

24 Some of the materials for such a study are collected in Dybo 1982. The factors in play were, on the one hand, the particular history of the word (originally athematic and/or non-root-accented forms were not subject to SPL); and, on the other, the possible analogical pressure of other tense stems, other verbs of similar appearance or meaning, etc.

	pre-BSl.		post-SPL		post-Proto-VDL		Proto-BSl.
absolute (no prefix)							
1 sg (disyllabic)	**supóH*[25]	>	**supȯH*	>	**supȯH*	>	****supō***
3 sg. (trisyllabic)	**supéti*	>	**sŭpeti*	>	**sŭpeti*	>	****sŭpeti***
3 pl. (trisyllabic)	**supónti*	>	**supȯnti*	>	**supȯnti*	>	****supȯnti***
conjunct (prefixed)							
1 sg (disyllabic)	**X-supóH*	>	**X-supȯH*	>	**X-supȯH*	>	****X-supō***
3 sg. (trisyllabic)	**X-supéti*	>	**X-sụpeti*	>	**X-sụpeti*	>	****X-sụpeti***
3 pl. (trisyllabic)	**X-supónti*	>	**X-supȯnti*	>	**X-supȯnti*	>	****X-supȯnti***

Neither the absolute nor the conjunct paradigm would have been well-formed by later BSl. standards. In the absolute paradigm the wrongly placed left-marginal accent (in **sŭpeti*, etc.; contrast "correct" mobile **(-)vedeti*) would have alternated impermissibly with a lexical accent that was columnar rather than right-marginal (**supō*, **supȯnti* (not **-onti*)); in the conjunct paradigm the accent would have moved from one syllable to another (**-supō* vs. **-sụpeti*), but with a lexical, not a left-marginal accent in the barytone forms. The most obvious conclusion to be drawn about the treatment of *tudáti*-presents in Balto-Slavic—and by extension, all thematic presents with accent on the thematic vowel—is that their phonologically regular accentual profile, if it ever existed, was lost.

But *did* it ever exist? In Slavic, where verbs with roots ending in a liquid or nasal still retain accentual traces of their past history (cf. mobile **bȅrǫ* vs. immobile **ženǫ́*), some descriptive *tudáti*-presents from **CVR-* roots belong to AP c (mobile) and others to AP b (immobile). To the mobile type belong, e.g., **žȁrǫ* 'devour', **pȁrǫ* 'push', **dȁrǫ* 'rip', and **pȁnǫ* 'stretch'; to the immobile type belong **mьnǫ́* 'trample', **žьmǫ́* 'press', **jьmǫ́* 'take', and **-čьnǫ́* 'grasp(?)'.[26] The difference is confirmed by non-Lithuanian Baltic: OPr. *imma* (: **jьmǫ́*) is likewise immobile (6.1), and the Latvian pair *pît* 'to braid' (broken tone) : *mĩt* 'to trample' (sustained tone) replicates PSl. **pȁnǫ* (mobile) : **mьnǫ́* (immobile). The mobile and immobile types have very different comparative profiles. In the mobile forms, PSl. **žȁrǫ* and **pȁrǫ* are among the relatively few inherited verbs for which a *tudáti*-present can plausibly be reconstructed for the parent language (**žȁrǫ* = Ved. *giráti* 'swallows' < **gᵘr̥h₃-é/ó-* (cf. LIV 211); **pȁrǫ* = Ved. *sphuráti* 'kicks' < **spr̥H-é/ó-* (LIV 585)). The roots underlying these two

25 I use Olander's example for illustration.

26 These are the best cases with good etymologies; cf. Dybo 1981: 203 ff. and above all Koch 1990: 443 ff. Note that some apparent *tudáti*-presents from roots ending in **-r-* (e.g. **mьrǫ* 'die' and **-stьrǫ* 'spread out') are actually younger forms of *i̯e/o*-presents.

verbs, moreover, made root aorists in PIE (cf. Ved. 3 pl. subj. *garan*, 2 sg. inj. *spharīḥ*), as did **der-* 'tear', the root underlying mobile **dȕrǫ* (Ved. 3 sg. *ádar*), and perhaps **spenh₁-* 'stretch', the root underlying mobile **pȕnǫ* (cf. *LIV* 578–9). The verbs of the immobile type (**mьnǫ̀, *žьmǫ̀, *jьmǫ̀, *-čьnǫ̀*), by contrast, are less "embedded" than those of the mobile type. None has a *tudáti*-present cognate outside Balto-Slavic. **jьmǫ̀*, the only one with a full set of morphologically informative cognates, appears to have been extracted from a root present.[27]

"Real" *tudáti*-presents to roots in **-R-*, in short, seem to have become mobile in Slavic, while later *tudáti*-present lookalikes, which either did not exist at the BSl. stage or were still athematic when mobility began to spread, are immobile. If we try to envisage a scenario by which a pre-BSl. present **gr̥Hé/ó-* (< PIE **gᵘr̥h₃-é/ó-*) could have become mobile, two possibilities come to mind:

(1) Pre-BSl. **gr̥Hé/ó-* underwent SPL and Proto-VDL, giving ill-formed outputs of the type just discussed for **supé/ó-* (i.e., **gr̥Hō̍, *gr̥̀Heti, *gr̥Hȯnti*, etc.; **-gr̥Hō̍, *-gr̥̀Heti, *-gr̥Hȯnti*, etc.). In due course, the impermissible alternation pattern was replaced by standard mobility.

(2) *Prior* to the operation of SPL and Proto-VDL, Pre-BSl. **gr̥Hé/ó-* was remade to **gŕ̥He/o-*, with analogical accent on the root. Root-accented **gŕ̥He/o-* then underwent SPL and Proto-VDL, emerging with the same accent pattern as **u̯édʰe/o-* (**ne gŕ̥HoH* > **nè gr̥HoH*; **ne gŕ̥Heti* > **nè gr̥Heti* > **ne gr̥Hetȉ*, etc.).

There is no direct evidence that would allow us to decide between these alternatives. Scenario 2, however, is obviously simpler. Under scenario 1, we would have to assume a period when mobility, at least in verbs, came in (at least) two varieties, one of which bore no resemblance to mobility of the standard bilateral type; and then to assume that this second type of mobility, after existing for a time and vastly complicating the overall workings of the BSl. accentual system, gave way for no obvious reason to bilateral mobility of the standard type.[28] If Occam's Razor is allowed a voice in the decision, then scenario 2,

27 Arguably, a Narten present **h₁ḗm-ti* : **h₁ém-n̥ti*, if I am correct in arguing (2012: 133) that a Narten present was the source of Lith. pret. *ẽmė* 'took', Lat. *ēmī* 'bought', and OIr. *·ét* (*t*-pret.) 'took'.

28 I say "for no obvious reason" because if the development of the second mobile type had paralleled the development of the first, the conjunct paradigm would at some point have replaced the absolute forms, just as in the case of **u̯édʰ-e/o-*. The result of the generalization of the conjunct forms would have been a paradigm **gr̥Hō̍, *gr̥̀Hes(e)i, *gr̥̀Heti, *gr̥̀Homes*(?), **gr̥̀Hete, *gr̥Hȯnti*, which, with its initial lexical accent in all but two of the

which eliminates the need for a wholly gratuitous second mobility type, must be our default choice.

We will call the hypothetical analogical process by which the accent was transferred from the thematic vowel to the root syllable in oxytone thematic presents (i.e., **g^{u}r̥h$_3$-é/ó-* → **g^{u}ŕ̥h$_3$-e/o-*) "thematic barytonization." It will be assumed in what follows that thematic barytonization, operating before SPL, was the mechanism by which *tudáti*-presents of the type **g^{u}r̥h$_3$-é/ó-* merged accentually with root-accented simple thematic presents of the type **u̯éd^{h}-e/o-*, and, like these, became mobile. As we shall see, it is a productive assumption, with consequences reaching far beyond *tudáti*-presents proper.

6.2.2 *Extended Thematic Presents*

Turning from simple to extended thematic presents, we again find the situation described in 6.1. In Lithuanian mobility is wholly determined by stem type; in Slavic this is true for roots ending in an obstruent, but not for roots ending in a sonorant or descriptive long vowel.

6.2.2.1 *Nasal Presents*

Intransitive nasal presents with inchoative and anticausative meaning, although not unknown in the "classical" IE languages (cf., e.g., Lat. *incumbō* 'lie down'), are a trademark category of Balto-Slavic and Germanic, where they have become productive. Baltic retains the nasal as an infix (e.g., Lith. *buñda* 'wake(s) up', (*pri*)*liñ̃pa* 'stick(s) (to)', (*su*)*tiñka* 'agree(s)'), while Slavic and Germanic have mostly restructured it as a suffix (e.g., PSl. **vъz-bъ(d)netь* 'wakes up' (compare Go. *ga-waknip* 'id.'), PSl. **pri-lь(p)netь* 'sticks (to) = Go. *af-lifnip* 'remains over').[29] These forms, as I have suggested elsewhere (2003: 222), are not mere mechanical thematizations like Lat. *iungō* or Pali *yuñjati* beside Ved. 3 sg. *yunákti* 'yokes', pl. *yuñjánti*, or Ved. *mr̥ṇáti* 'crushes', pl. *-ṇánti* beside older **mr̥ṇáti, -ṇánti*.[30] Rather, as argued in detail by Gorbachov (2007), the thematic inflection and intransitive meaning of the inchoative nasal presents in Balto-Slavic and Germanic are linked by the fact that the original forms were "protomiddles," characterized by intransitivity and *h$_2$e*-conjugation inflection (1 sg. **-h$_2$é(i)*, 2 sg. **-th$_2$é(i)*, 3 sg. **-é*, etc.).[31] As in other *h$_2$e*-conjugation

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forms, would have looked more "immobile" than mobile from the standpoint of later Balto-Slavic.

29 Slavic retains the infix in *sędǫ*, etc. (6.2.1.3).

30 Note the contrast with the actual reflex of PIE **i̯u-n-(é)g-* in Lithuanian, which is not **junga*, inf. **jugti*, but *jungia*, inf. *jungti*.

31 For the conceptual framework, see Jasanoff 2003: 144–9 and now Jasanoff forthcoming.

categories, the athematic 3 sg. in **-e* was liable to be remade to **-eti*, resulting in the creation of a full-fledged post-IE thematic active.[32] Whether fully thematic present stems of the type **b^{h}und^{h}-é/ó-* already existed in the parent language or were an innovation of the immediate post-PIE period is immaterial for our purposes.

Thematic nasal presents are immobile in Lithuanian and (for roots ending in an obstruent) Slavic, pointing to a Proto-BSl. paradigm **bu̯ndō*, **bu̯ndesi*, **bu̯ndeti*, etc. The task for a theory of verbal mobility is to explain how the accent came to be fixed on the root. If SPL and Proto-VDL had operated directly on the inherited stem **b^{h}und^{h}é/ó-*, the result would have been the same anomalous distribution as in a *tudáti*-present:

	pre-BSl.		post-SPL		post-Proto-VDL		Proto-BSl.
absolute (no prefix)							
1 sg (disyllabic)	**b^{h}und^{h}óH*	>	**bundòH*	>	**bundòH*	>	****bundō***
3 sg. (trisyllabic)	**b^{h}und^{h}éti*	>	**bu̯ndeti*	>	**bu̯ndeti*	>	****bu̯ndeti***
3 pl. (trisyllabic)	**b^{h}und^{h}ónti*	>	**bundònti*	>	**bundònti*	>	****bundànti***
conjunct (prefixed)							
1 sg (disyllabic)	**-b^{h}und^{h}óH*	>	**-bundòH*	>	**bundòH*	>	****-bundō***
3 sg. (trisyllabic)	**-b^{h}und^{h}éti*	>	**-bu̯ndeti*	>	**-bu̯ndeti*	>	****-bu̯ndeti***
3 sg. (trisyllabic)	**-b^{h}und^{h}ónti*	>	**-bundònti*	>	**-bundònti*	>	****-bundànti***

If we wished to proceed from here, we would have to assume, first, replacement of the absolute by the conjunct paradigm, as in simple thematic presents, and, second, generalization of the stem **bu̯nde-* from the 3 sg. and other barytone forms. But, as will be obvious, a much simpler and more straightforward explanation is available. If thematic barytonization could move the accent from the thematic vowel to the root in a *tudáti*-present like **g^{u}ru̯h$_3$-é/ó-* (→ **g^{ú}rú̯h$_3$-e/o-* > Proto-BSl. **gi̯rō* ~ **gireti*), it could also have had this effect in a thematic/thematized nasal present like **b^{h}und^{h}é/ó-*:

**b^{h}und^{h}é/ó-* → **b^{h}únd^{h}e/o-* > Proto-BSl. **bu̯ndō, *bu̯ndesi, *bu̯ndeti*, . . .

The barytonized stem **bu̯nde-* would have remained accentually unchanged until well into the history of the individual languages. Retraction onto a particle or preverb would not have occurred because the root syllable—here *and*

32 Compare the parallel case of the Baltic presents in **-ā-* < **-eh$_2$e/o-*, thematized from **-eh$_2$-* (3.2.2).

in all nasal presents from roots ending in an obstruent—was closed. With the assumption of thematic barytonization, the immobility of inchoative nasal presents finds a remarkably simple explanation: there is no mobility because there was no SPL, and there was no SPL because the open-syllable requirement for SPL was not met.[33]

Complicating the picture, but only slightly, is another class of presents in **-ne-* that cannot be so neatly explained. This is the Slavic type of **rĭnǫ*, inf. **rĭnǫti* 'push', formed to roots ending synchronically in a long vowel. Presents of this type were originally "normal" (i.e., non-h_2e-conjugation) athematic actives and lack the characteristic inchoative meaning of the protomiddle-based forms. Some are immobile (e.g., **rĭnǫ*, **dŭnǫ* 'blow', **zĭnǫ* 'yawn', all AP a); others are mobile (e.g., **vînǫ*, **-netь* 'twist, twine', **plȗnǫ*, **-netь* 'sail', **mânǫ*, **-netь* 'wave, move'). The historical point of departure was the PIE athematic type in **-n(é)u-* (cf. past ptcp. **rĭnovenъ*, **vinovenъ*, etc.), which in Slavic absorbed the athematic quasi-suffix **-n(é)H-* and eventually took on thematic inflection. None of the forms as we have them can be very old—not only because of their late and secondary thematization, but because the full form of the root has in every case been restored before the nasal (e.g., **rinǫ* for "correct" **rъnǫ* < **$h_3$ri-n-H-*). It is thus hardly surprising that the mobility or non-mobility of this type is unpredictable in "deep" historical terms. In some cases the forms agree with the related non-nasal presents to which they serve as derived perfectives (cf. **vь̑jǫ*, **-etь* 'twist' beside mobile **vînǫ*; **dŭjǫ*, **-etь* 'blow' beside immobile **dŭnǫ*; etc.).

6.2.2.2 *The Baltic Presents in* -sta-

The Baltic inchoative presents in *-sta-* (e.g., Lith. *gìmsta* 'is born', *mìršta* 'dies', *álksta* 'starves') are largely in complementary distribution with the inchoative nasal presents and, like these, are consistently immobile in Lithuanian. The etymology of the suffix is famously disputed; the only plausible possibility, in my view, is the PIE inchoative, iterative, and desiderative suffix **-(h_1)sḱe/o-* (usually oxytone **-(h_1)sḱé/ó-*).[34] Etymology, however, has little to do with the

33 Nor would it have been met, it should be noted, in later suffixed structures of the Slavic type **-bъdnǫ*, to the extent these were present at the relevant stage of pre-SPL Balto-Slavic. In theory, presents in **-C-ne/o-* would have been proper to roots ending in **-V(R)CH-*, where the nasal would have been infixed immediately before the laryngeal.

34 For a summary of opinions on this fraught topic see Schmalstieg 2000: 159–67 and, more recently, Gorbachov 2014: 4 ff., where a case is made for **-(h_1)sḱe/o-* as an expansion of the desiderative suffix **-(h_1)s-*. I am not persuaded by the attempt of Villanueva Svensson (2010) to trace the **-t-* to the 3 sg. middle ending **-to(i)*.

accentual behavior of these forms in Baltic. The overriding fact is that the addition of a thematic suffix of the shape *-C_1C_2e/o- to a verbal root automatically guaranteed a closed first syllable. If thematic barytonization was operative here as in the *tudáti*- and nasal presents, its effect would have been to establish the accent permanently on the root:

*(ne) $mr̥$-h_1ské/ó- → *(ne) $mr̥$-h_1ske/o- > *(ne) mir̲šta-

Cf. Lith. *mìršta*, *nemìršta* = Latv. (dial.) *miřst*—the latter with sustained tone, indicating a former lexical accent on the root (cf. Derksen 2014: 321). The antiquity of the pair *mìršta* : *miřst* is proved by the *ruki* treatment of the *-*s*- in Lithuanian and by the shared Letto-Lithuanian acuteness, due to the laryngeal in the sequence *-*r*-h_1sk-, of the historically laryngealless root **mer*-.[35]

6.2.2.3. *Presents in* *-i̯e/o-

The presents in *-*i̯e/o*- confront us with a more complicated picture. The nondenominative stems that surface with this suffix in Baltic and Slavic include a number of historical formations:[36] 1) full-grade presents with accent on the root (type PIE **h₂érh₃-i̯e/o*- 'plow'); 2) zero-grade presents, often intransitive, with accent on the suffix (type PIE **mn̥-i̯é/ó*- 'think'; 3) post-IE thematizations of *i*-presents (type PIE **d*^{h}(*é*)h_1-*i*- 'suck', **spe̋h₂-i*- 'thrive');[37] and 4) post-IE renewals of root presents, including the "normal" type with **e* : zero ablaut (e.g., 3 sg. **léiǵh-ti* 'licks'), the "Narten" type with **ē* : **ĕ* ablaut (e.g., 3 sg. **stéu-ti* 'proclaims'), and the "*molō*" type with **o* : **e* ablaut (e.g., **mólh₂-e* 'grinds'; cf. ch. 1, note 20). Yet other *i̯e/o*-presents replaced other athematic present types or were created to supply presents to root aorists.

Like the thematic presents in simple *-*e/o*-, *-*nCe/o*- ~ *-*Cne/o*-, and *-(*h*$_1$)*sk*e/*o*-, *i̯e/o*-presents were apparently subject to thematic barytonization. All *i̯e/o*-presents that existed at the time of SPL were treated in Balto-Slavic as if they were accented on the root. But in the period following SPL, new verbs joined

35 The Latvian sustained tone is general in acute roots ending in a liquid or nasal, e.g., *pazīst* 'recognize(s)' (= Lith. *pažįsta*), *rimst* 'subside(s)' (= Lith. *rimsta*) (Endzelīns apud Stang 1966: 456–7), beside which the broken tone in obstruent-final roots (e.g. *aîkst* crave(s) = Lith. *álksta* 'starves') is probably secondary (*ibid.*). The best candidate for a present in *-*sta*- in Old Prussian is 1 pl. *poprestemmai* 'we feel', unexpectedly with "mobile" accent.

36 Not included in the discussion that follows are the derived present types in "*-*āi̯e/o*-," "*-*ēi̯e/o*-," etc.; cf. note 7.

37 The stem represented by Lith. *spė́ju* 'be in time', OE *spōwan* 'thrive', etc. evidently had Narten ablaut (cf. Jasanoff 2003: 107–10).

the **-i̯e/o-* class without necessarily taking on the mobility or non-mobility that would have been "correct" for their stem shape if they had been inherited. The resulting confusion was analogically simplified in different ways, partly within Balto-Slavic and partly within the languages separately. In Slavic, as always, roots ending in an obstruent emerged with a uniform treatment, while roots ending in a sonorant or long vowel resisted complete homogenization and sometimes retained traces of their older accentual profile. In Lithuanian the treatment of presents in *-ia-* came to depend entirely on whether the root was long ("heavy") or short ("light"). In surveying the data, we have to distinguish four cases:

(1) **-V́̃C-i̯e/o-* (long nucleus, obstruent-final root): Since the root syllable was both long and closed, SPL would not have applied in old cases. Both the Baltic and Slavic reflexes are predictably immobile. Exx.: Lith. *liẽžia*, *neliẽžia* = PSl. **ližь̀* (AP b) < **léiǵʰ-i̯e/o-*;[38] Lith. *baũdžia*, *nebaũdžia* 'punish' < **bʰéudʰ-i̯e/o-*; PSl. **plačǫ* 'cry' (AP a) < **pleh₂k-i̯e/o-*(?); OPr. *etwērpimai* < **u̯erp-i̯e/a-* 'we forgive'; *serrīpimai* < **-rēp-i̯e/a-* 'we endure', with root accent. Few if any presents of this structure can be projected all the way back to PIE; most of the BSl. instances are early or late replacements of other stem types.

(2) **-V́̆C-i̯e/o-* (short nucleus, obstruent-final root): Since the root syllable was closed, SPL would, as in the preceding case, not have applied, and immobility would have been regular. We in fact find immobility in Slavic (e.g., **češǫ̀* < **kés-i̯e/o-* 'comb' (AP b)). In Lithuanian, however, light *i̯e/o*-presents are mobile; we thus have, e.g., *srẽbia*, *nèsrebia* 'slurp' < **srébʰ-i̯e/o-* and *lẽkia*, *nèlekia* 'fly' < **lék-i̯e/o-*. The mobility of these forms is an innovation, imported into roots in **-V́̆C-* from roots in **-V́̆R-*, which are mobile and where retraction by SPL was regular (cf. below).

(3) **-V́̆R(H)-i̯e/o-*, **-Ŕ̥(H)-i̯e/o-* (short nucleus, descriptively liquid- or nasal-final root): The etymological clusters **-ri̯-*, **-li̯-*, **-ni̯-*, **-mi̯-* (including **-ri̯-*, **-li̯-*, **-ni̯-*, **-mi̯-* < **-rHi̯-*, **-lHi̯-*, **-nHi̯-*, **-mHi̯-* by Pinault's Law)[39] were unitary phonemes in Proto-Balto-Slavic. The root syllable in pres-

38 The stem **léiǵʰ-i̯e/o-*, though probably of BSl. date, was the replacement of a PIE root present (cf. Ved. *réḍhi*). No claim is made for the IE antiquity of the examples that follow, which are cited only to illustrate the relevant structures.

39 The PIE rule according to which laryngeals were lost between a consonant and a following **-i̯-* (cf. Pinault 1982: 265 ff.).

ents of this structure was therefore always short and open, and mobility was phonologically regular in both branches. In Lithuanian mobility is invariably what we find: cf. *gẽria*, *nègeria* 'drink(s)' (< **g^{u}érh$_3$-i̯e/o-*), *kẽlia*, *nèkelia* 'raise(s)' (< **kélH-i̯e/o-*), *gìria*, *nègiria* 'praise(s)' (< **g$^{u}_{\mathring{}}$rH-i̯é/ó-*), etc. In Slavic both the mobile and immobile treatments are attested, depending on the history of the particular verb. An inherited case with phonologically regular mobility is **ȍrjǫ*, **orjetь* 'plow' (< **h$_2$érh$_3$-i̯e/o-*; cf. Lith. *ãria*, *nèaria* + Go. *arjan*, OIr. *airiu*, Gk. *aróō*). Another is **mь̑r(j)ǫ*, **mьr(j)etь* 'die' (< **mr̥-i̯é/ó-*; cf. note 26), which, since it was historically accented on the suffix (cf. Ved. *mriyáte* 'id.'), constitutes an important piece of evidence for thematic barytonization. Cases where Slavic fails to show mobility are unoriginal or secondary, as in **žьrjǫ̀* 'sacrifice', which, though probably of BSl. date (= Lith. *gìria*), is not actually the continuant of a PIE **g$^{u}_{\mathring{}}$rH-i̯é/ó-* (= Lith. *gìria*), but the BSl. replacement of a PIE nasal present (cf. Ved. *gr̥ṇáti* 'praises').[40] Here too belong the *molō*-presents **borjǫ̀ sę* 'fight', **meljǫ̀* 'grind', and **koljǫ̀* 'stab, thrust' (all AP b), with immobility (also seen in the sustained tone of Latv. inf. *bãrt*, *maĩlt*, *kaĩlt*) reflecting an earlier athematic *h$_2$e*-conjugation paradigm (PIE **b^{h}órH-h$_2$ei*, **-th$_2$ei*, etc. > BSl. **bȁr-Hai*, **-sei*, etc.; cf. OLith. 3 p. *barti* (Hock et al. 2015: 96)).[41] As in the case of the presents in simple thematic **-R-e/o-*, an extended analysis of the treatment of presents in **-R-i̯e/o-* in Slavic must remain a task for the future.

(4) **-VH-i̯e/o-* ("long vowel" root): Lithuanian, predictably, has uniformly acute immobile reflexes: *sė́ju* (ptcp. *sė́jąs*) 'sow' (**séh$_1$-i̯e/o-*), *spė́ju* (*spė́jąs*) 'have time (for)' < **spéh$_3$-i̯e/o-*), *lóju* (*lójąs*) 'bark' (< **léh$_2$-i̯e/o-*), etc. This is also the phonologically regular treatment in Slavic; cf. the cognate forms **sě̋jǫ* 'sow', **spě̋jǫ* 'be successful', and **lȃ́jǫ* 'bark', all AP a. But there are many exceptions in Slavic, as well as in Latvian. One of the more instructive is PSl. **dě̌jǫ*, **-etь* 'make, do' (AP c), Latv. *dêju* 'lay eggs', with broken tone (i.e., "mobile"). This stem is not old; its accentual properties were taken over from the reduplicated present **d^{h}éd^{h}eh$_1$-mi*, **-si*, **-ti*, etc., where retraction, and hence mobility, would have been regular in the presence of a prefix (**ne d^{h}éd^{h}eh$_1$-ti* > **nè dedeH-ti*, etc.). The same was the case with **dâjǫ*, **-etь* 'give'; see 6.5 below. Some mobile root presents

40 OPr. 1 pl. *girrimai* 'we praise'and Latv. inf. *dzi̯rt* likewise point to immobility.

41 Standard Lithuanian has *barù*, *bãra* ('scold'), mechanically thematized from the older athematic stem. Latvian has a *i̯e/o*-present *bar̃u*, like Slavic **borjǫ̀*, but independently created.

in **-ə̂́jǫ* (**-âjǫ*) are from diphthongal roots and despite their lengthened-grade root vocalism have analogically taken on the default mobility of pure thematic presents, e.g., **čâjǫ*, **-etь̀* 'expect' < **kᵘə̂́i̯-e/o-* (= Ved. *cā́yati* 'notice'),[42] **lə̂́jǫ*, **-etь̀* 'pour' < **lə́iH-e/o-*.

6.2.3 *Thematic Presents: Summary*

The foregoing sections have outlined a theory of mobility in thematic presents, a term used in the present context to embrace both stems in simple thematc **-e/o-* and stems in one of the monosyllabic thematic complexes **-nCe/o-* ~ **-Cne/o-*, **-(h₁)sḱe/o-*, or **-i̯e/o-*. The theory maintains that

(1) all thematic presents with accent on the thematic vowel transferred the accent to the root (e.g., **bʰundʰé/ó-* → **bʰúndʰe/o-*, **mr̥i̯é/ó-* → **mə́r̥i̯e/o-*; "thematic barytonization");

(2) SPL applied to particle/preverb + verb sequences when the root syllable was short and open, creating separate conjunct and absolute paradigms (e.g., conjunct **nĕ u̯edeti*, **nĕ Hari̯eti*, **nĕ mr̥i̯eti* vs. absolute **u̯èdeti*, **Hàri̯eti* **mə̀r̥i̯eti*; invariant **(ne) bù̯ndeti*);

(3) tetrasyllabic conjunct complexes headed by a left-marginal accent underwent Proto-VDL, moving the accent to the end of the phonological word (**nĕ *u̯edeti* > **ne u̯edetì*; **nĕ Hari̯eti* > **ne Hari̯etì*, **nĕ mr̥i̯eti* > **ne mr̥i̯etì*; invariant **ne bù̯ndeti* > **ne bù̯ndeti*);

(4) presents with separate absolute and conjunct paradigms generalized the conjunct pattern (absol. **u̯èdeti*, **Hàri̯eti*, **mə̀r̥i̯eti* replaced by **u̯edetì*, **Hari̯etì*, **mr̥i̯etì*).

While all this was happening, and for many centuries afterwards, complicating morphological forces were also at work. Synchronically associated groups of forms (e.g., the class of all simple thematic presents, the class of verbs with roots ending in a liquid or nasal, etc.) tended to pattern identically, regardless of their individual susceptibility to SPL and Proto-VDL. New verbs, were constantly being thematized or otherwise added to the thematic ranks; how these were treated was partly a function of their root shape. As shown by Slavic, the more protean shape of sonorant-final roots, especially their intona-

42 Alongside apparently older **cə́jǫ*; cf. Derksen 2008: 78 and 3.4.2, with note 39.

bility in some situations (cf. PSl. infin. **bŏrti* < **bo̯r-t(e)i*) and not others (3 sg. **borjètь* < pre-Dybo's Law **bo̯rjetь*, i.e., **bo̯.rje.tь*), rendered them less susceptible to sweeping analogical trends than roots that ended in an obstruent. What emerged in the end can be summarized as follows:

stem type	expected result	actual Lith. outcome	actual Slavic outcome
**-e/o-*	mobility with "light" roots	mobility with all roots	mobility with most obstruent-final roots;[43] variable mobility with other roots
**-n(C)e/o-*	no mobility	no mobility	no mobility[44]
**-(h₁)sḱe/o-*	no mobility	no mobility	—
**-Ci̯e/o-*	no mobility	mobility with light roots	no mobility
**-(V̆)R(H)i̯e/o-*	mobility	mobility	mobility in old cases; variable mobility otherwise
**-VHi̯e/o-*, **-V̄i̯e/o-*	no mobility	no mobility	no mobility in old cases; variable mobility otherwise

6.3 "Semithematic" Presents in Baltic

The term "semithematic" was used by Meillet to describe a type of PIE inflection that supposedly combined a thematic 1 sg. in **-i̯ō*, 1 pl. in **-i̯omes* (*vel sim.*), and 3 pl. in **-i̯onti* with an athematic 2 sg. in **-ĭ̯si*, 3 sg. in **-ĭ̯ti*, and 2 pl. in **-ĭ̯te*. Paradigms of this purported type (along with **-i̯ō*, **-ēisi*, **-ēiti* and similar constructs)[45] make frequent appearances in early and mid-twentieth-century IE scholarship, especially in Balto-Slavic and Italo-Celtic contexts, but have rightly fallen out of favor in the past half century. The term is retained here only as a convenient label, following Stang, for the Baltic presents in **-ā-* and **-ĭ-* and the Slavic presents in **-i-*.

43 With exceptions listed in 6.2.1.3.

44 Excluding the type **vîną*, which was not of thematic origin.

45 See especially Schmid 1963.

6.3.1 *The Baltic Presents in* *-ā-

Baltic is one of two branches of IE, along with Anatolian, to offer unambiguous evidence for presents in both *-eh_2i̯e/o- ("*-āi̯e/o-") and *-eh_2- ("*-ā-").[46] The familiar thematic suffix *-eh_2i̯e/o- is uncontroversially represented in Baltic by (*inter alia*) the Lithuanian denominative type *galvóju* 'I think' (: *galvà*) and the Latvian iterative type *lę̃kãju* (3.4.2). Both functions are also found in the cognate presents in *-*aje*/*o*- in Slavic. But bare *-eh_2-, the immensely productive source of the Baltic presents in *-ā- (Lith. -*o*-), has no Slavic equivalent. The Baltic *ā*-presents are iteratives, intensives, and causatives, normally paired with infinitives in *-*īti* (Lith. -*yti*), as in Lith. *sakaũ*, -*aĩ*, *sãko*, inf. *sakýti* 'say', *vartaũ*, -*aĩ*, *vařto*, inf. *vartýti* 'turn over', etc. The association of *-ā- with *-*īti* is secondary, a result of the systematic replacement of the inherited iterative-causative suffix *-*éi̯e*/*o*- by *-eh_2-/*-ā- in Baltic. Since there was no such replacement in Slavic, the Slavic cognates of Lith. *sakaũ*, -*ýti* and *vartaũ*, -*ýti* (= Latv. *saku*, *sacît*; *vàrtu*, *vàrtît*) are **sočǫ̀*, *-*îši*, inf. *-*íti* 'indicate' and **vortjǫ̀*, *-*îši*, inf. *-*íti* 'return', respectively, with the original present inflection in non-acute *-*ī*- (< *-*ei̯e*-) intact.[47] The domains of *-eh_2- and *-*ei̯e*/*o*- were originally distinct. The presents in *-eh_2- were properly denominative factitives of the type canonically illustrated by Hitt. *newaḫḫ*- (3 sg. *newaḫḫi*) 'make new' (= Lat. *renouāre*). A form like Lith. *stataũ* 'I build' thus originally meant 'I make to be **sth$_2$tó*- (i.e., standing)', while *vartaũ* literally meant 'I make to be **u̯ortó*- (i.e., turning)'. In Hittite, the *newaḫḫ*-type follows the *ḫi*-conjugation (3 sg. *newaḫḫi*), implying a h_2e-conjugation paradigm (*-eh_2-h_2e(*i*), *-eh_2-th_2e(*i*), *-eh_2-*e*, etc.) in PIE. As in the nasal presents (*b^hund^h-$h_2é$(*i*), *-$th_2é$(*i*), *-*é*, etc.; 6.2.2.1), the h_2e-conjugation forms were thematized in Balto-Slavic, yielding a complex suffix *-eh_2e/*o*- (cf. 3.2.2, 3.4.4). This, with loss of the intervocalic laryngeal, was the source of Baltic non-acute *-ā-.

ā-presents are uniformly immobile in Lithuanian (*sãko*, *nesãko*, *sãkąs*), and the Latvian evidence, such as it is, points in the same direction.[48] Any effort to explain this fact must begin with the observation that, as shown by the innumerable attested presents in *-ā̤i̯e/o- and *-ē̤i̯e/o- (Lith. -*óju*, -*éju*; Latv. -*ãju*, -*ẽju*; Sl. *-*ájǫ*, *-*ějǫ*), disyllabic thematic complexes like *-eh_2e/o-, *-eh_2i̯e/o-, *-eh_1i̯e/o-, *-ei̯e/o-, etc., unlike the monosyllabic suffixes previously discussed, were *not* subject to automatic thematic barytonization. Given this, and as a sort of thought experiment, let us make the minimally constraining assumption

46 See, however, the discussion of Myc. 3 sg. *te-re-ja* 'completes' in Rau 2009, where a strong case is made for adding Greek to the list.

47 On the history of the segmental forms see 6.4.1 below.

48 Cf. Stang 1966: 457.

that, depending on their derivational basis, some members of the original inventory of presents in *-*eh*$_2$*e*/*o*- accented the suffix (*X$_{root}$-*éh*$_2$*e*/*o*-) and others the root (*X́$_{root}$-*eh*$_2$*e*/*o*-). In the first case (*X$_{root}$-*éh*$_2$*e*/*o*-), SPL would have generated a left-marginal accent on the root in the absolute forms:

3 sg. *X$_{root}$-*éh*$_2$*eti* > *X̀$_{root}$-*eh*$_2$*eti*

but not in the conjunct forms, where the root would have been non-initial in the phonological word:

3 sg. **ne* X$_{root}$-*éh*$_2$*eti* > **ne* X̀$_{root}$-*eh*$_2$*eti* > **ne* X̣$_{root}$-*eh*$_2$*eti*

In this situation we would expect the conjunct pattern i.e., immobility to have been generalized, just as was the case in the simple thematic presents. But in the second case (*X́$_{root}$-*eh*$_2$*e*/*o*-) the outcomes would have been partly reversed. Here the absolute forms would have retained their initial lexical accent:

3 sg. *X́$_{root}$-*eh*$_2$*eti* > *X̣$_{root}$-*eh*$_2$*eti*

while the conjunct forms, in light but not heavy roots, would have received a left-marginal accent on the particle:

3 sg. **ne* X́$_{root}$-*eh*$_2$*eti* > **nè* X$_{root}$-*eh*$_2$*eti* (> post-Proto-VDL **ne* X$_{root}$-*eh*$_2$*eti*)

Here, then, mobility would have been expected as the generalized outcome when the root was light, while immobility would have been the only possible outcome when the root was heavy. What we learn from this exercise is that *ā*-presents with heavy roots would have come out immobile no matter how they were originally accented, and that *ā*-presents with light roots would have come out mobile when the accent was originally on the root and immobile when the accent was on the suffix. Given that one pattern or the other—mobility or immobility—was destined to be generalized, it is unsurprising that immobility carried the day.

6.3.2 *The Baltic Presents in* *-ĭ-

An important class of verbs in Baltic consists of presents in which the 1 sg. and 2 sg. are identical with the corresponding forms of a present in *-*i̯e*/*o*- (e.g., Lith. 1 sg. *miniù* 'I mention, have in mind', 2 sg. *minì*; compare *geriù* 'I drink', 2 sg. *gerì*), but the remaining forms have *-*ĭ*- (= Lith. -*i*-) where *i̯e*/*o*-presents have -*ia*- (e.g., 3 p. *mìni*, 1 pl. *mìnime*, 2 pl. *mìnite*, etc.; contrast *gẽria*, *gẽriame*,

gẽriate). Such "*ĭ*-presents" have stative meaning in the oldest cases and are paired with infinitives in **-ēti* (*minė́ti*). Outside Lithuanian, the type is also found in Old Prussian (e.g., 3 p. *turri* 'has/have', inf. *turīt* = Lith. *tùri*, *turė́ti* 'id.') and dialectal Latvian.

There are no *ĭ*-presents in Slavic. But Slavic has an obviously cognate class, likewise with predominantly stative semantics and an infinitive in **-ēti* (e.g., **mьněti* 'think'), in which the Baltic forms in **-ĭ-* are replaced by forms containing the etymological long vowel **-i-* (e.g., 1 sg. **mьnjǫ*, 2 sg. **mьniši*, 3 sg. **mьnitь*, 3 pl. **mьnętь*). Since the Slavic inflection is the same as that of the iteratives and causatives with infinitives in **-iti* (e.g., **vortiti*, pres. **vortjǫ*, **-iši*, etc.; cf. above), the obvious inference is that pre-Slavic had separate long- and short-vowel paradigms, the one associated with infinitives in **-īti* and the other with infinitives in **-ēti*. The distinction between the two was never lost in Baltic, where the cognate of the Slavic long-vowel inflection (see below) was eventually replaced by the type in **-ā-*. In Slavic, the two types merged in their finite forms,[49] remaining easily distinguishable in meaning (iterative-causative vs. stative) and retaining their separate infinitives (**-iti* vs. **-ěti*).

Apart from a relatively small number of cases like **vĭ́djǫ*, **vĭ́disi*, etc. 'see' and **slyšǫ*, **slyšiši*, etc. 'hear', where the root was historically accented and acute (AP a),[50] stative *i*-presents are uniformly mobile in Slavic (**mь̑njǫ* ~ **mьnitь*, etc.).[51] In Baltic mobility and non-mobility are more evenly divided. To the mobile type in Lithuanian belong, e.g., *minė́ti* (3 p. *mìni*, *nèmini*), *budė́ti* 'be awake', *garė́ti* 'evaporate', and *smirdė́ti* 'stink'; to the immobile type belong *turė́ti* (3 p. *tùri*, *netùri*) 'have', *galė́ti* 'be able', *gulė́ti* 'lie', and *girdė́ti* 'hear'. Latvian, in acute roots, shows the same division into two classes; cf., e.g., *sêžu* 'I sit' (broken tone; cf. Lith. ptcp. *sėdį̃s* (mobile)) vs. *stãvju* 'I stand' (sustained tone; cf. Lith. *stóvįs* (immobile)). The few actual *i*-presents in Old Prussian are all immobile (e.g., 3 p. *turri* 'has/have', 1 pl. *turrimai*), possibly because, as suggested by Stang (1966: 320), the inherited mobile *i*-presents were remade as presents in **-ēja-* (e.g., 3 p. *budē* 'watch(es) over', as if Lith. **budė́ja*; 1 sg. *as milē* 'I love', as if Lith.

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49 The merger was not entirely one-sided. The forms in **-i-* were taken from the iterative-causative paradigm, but in the 3 pl., where the iterative-causative ending **-ei̯onti* would have given non-existent **-(j)ǫtь* or **-ь(j)ǫtь* in Slavic, the actual ending **-ętь* (> OCS *-ętъ*, R *-jat*, etc.) goes back to stative **-inti*.

50 The precise history of these two verbs, which combine the morphology and semantics of ordinary *i*-statives (cf. also Lith. *pa-výdi* 'envies/envy') with the root accent and other features of Narten presents (cf. *LIV* 666–7, with notes 17–19), remains tantalizingly elusive.

51 Also mobile are **sъpi-* 'sleep' and (probably) **sьčі-* 'piss', where the infinitive is anomalously in **-ati* (**sъpati*, **sьcati*) rather than **-ěti*.

**mylḗju*). There is no obvious way to predict the mobility or non-mobility of a given *i*-present in Baltic. It is easy to see, however, that the mobile forms have, on the whole, much better etymologies than the immobile ones, and that, with the unique exception of Lith. *pavýdi-* = PSl. **vī́di-*, only mobile *i*-presents form word equations with *mьněti*-type *i*-presents in Slavic.[52] It is the mobile type, therefore—the pattern **mĭn̥i̯ō̱*, **-itì*—that will mainly occupy us here.

The problem of explaining mobility in the core group of stative *i*-presents is complicated by the fact that there is no consensus regarding the segmental origin of these forms. In the influential classification system of *LIV*, the BSl. stative *i*-presents, along with the class III weak presents of Germanic (type Go. 3 sg. *munaiþ* 'remembers', pl. *munand*) and the class III presents of Tocharian (type B *lipetär* 'remains'), are traced to a non-standard PIE category termed the "essive." According to this conception, the direct phonological source of Baltic **-ĭ-* and pre-Slavic **-ī-*, as well as of Germanic **-ai-/-(j)a-*[53] and Tocharian B *-e-* (= Toch. A *-a-*), was a complex suffix **-h₁-i̯é/ó-*, made up of the zero grade of the "fientive" suffix **-eh₁-* ("**-ē-*") and a following accented **-i̯é/ó-*. How presents of this structure would have behaved with respect to thematic barytonization, SPL, or Proto-VDL is exceedingly difficult to say.[54]

This is not the place to reiterate my objections to the essive theory, which posits phonological developments that can be directly counterexemplified in all the IE branches it purportedly sheds light on, including and especially in Balto-Slavic.[55] My own view (e.g., in Jasanoff 2002–03), which might be called

52 Note, e.g., that all four of the mobile examples just cited (*minḗti*, *budḗti*, *garḗti*, *smirdḗti*) have exact cognates in Slavic (**mьněti*, **bъděti*, **gorěti*, **smьrděti*). Of the four immobile examples (*turḗti*, *galḗti*, *gulḗti*, *girdḗti*), the only one with an echo in Slavic is *galḗti*, with an **-ē-* that recurs in the PSl. adjective **golěmъ* 'huge' (Marek Majer, p.c.).

53 Scholarly opinion is divided over whether the Germanic suffix wss **-ai-/-a-* (as in Go. 3 sg. *habaiþ* 'has', 1 sg. *haba*) or **-ai-/-ja-* (as in OS *habed*, 1 sg. *habbiu*).

54 Under the normal BSl. rules, the laryngeal in sequences of the type **mn̥-h₁i̯é/ó-*, **bud-h₁i̯é/ó-* would not have vocalized, and the monosyllabic suffix **-h₁i̯é/ó-* would have triggered thematic barytonization (**mn̥-h₁i̯é/ó-*, **bud-h₁i̯é/ó-* → **mń̥-h₁i̯e/o-*, **bùd-h₁i̯e/o-*). "Barytonized" **mń̥-h₁i̯e/o-* and **bùd-h₁i̯e/o-*, in turn, would have lost the laryngeal and given mobile presents in Lith. *-ia-* and Slavic **-je/o-*. The output **-i-* presupposes 1) ad hoc analogical restoration or retention of the laryngeal before the suffix (see following note), and 2) development of restored/retained **-h₁i̯e-* to **-əi̯e-* (*vel sim.*) and **-ī-*, whence **-ĭ-*. Depending on how these events are understood to have been timed relative to Pinault's Law, thematic barytonization, and SPL, any accentual treatment of the *i*-statives would have been possible.

55 For the history and background of the theory, which ultimately goes back to the teaching of Warren Cowgill in the 1960's, see Jasanoff 2002/03 and Harðarsson 1998. Analogical steps are required in every branch because the indispensable vocalization of the laryngeal

the "root stative" theory, is that the forms referred to essives go back to athematic, mainly oxytone middle presents (*LIV*'s "schwundstufige Wurzelstative," class 1c) in 3 sg. **-ór* or **-ói*. Such forms were internally derived within PIE from "stative-intransitive" h_2e-conjugation aorists with **o* : **e*/zero ablaut (type 3 sg. **bʰóudʰ-e* 'awoke' : pl. **bʰéudʰ-r̥s* or **bʰudʰ-ḗr*). In Tocharian, where aorists of this type survive as subjunctives of class V,[56] a 3 sg. present like **lip-ór* 'sticks, remains' was renewed as **lipotor*, whence Toch. B *lipetär*. In the Germanic cognate of this verb, the 3 g. ending **-oi* was clarified by the further addition of **-ti*, whence Go. *libaiþ* 'lives'. In Balto-Slavic, the athematic 3 pl. **lip-n̥toi*[57] > **lipintai* generated a union vowel **-i-* which eventually spread to the rest of the paradigm and remained after the old middle endings were "activized" (3 pl. **lipintai* → **lipinti*, 3 sg. **lipai* → **lipiti* → later Sl. **(pri)-lьpitь̀* 'sticks to').

The root stative theory at once explains why stative *i*-presents became mobile. If the original middle paradigm was oxytone (**bʰudʰ-h₂éi*, **-th₂éi*, **-ói*, **-médʰh₂*, etc.), then the successor paradigm, with **-i-* generalized as a union vowel and active endings substituted for the middle ones, would have been oxytone as well:

	sg.	pl.
1	**budi̯ō̲*	**budimàs*
2	**budišè̲i̲*	**buditè*
3	**buditì*	**budintì*

The accent in these forms would not have been affected by the addition of a prefix (**ne budi̯ō̲*, **ne budišèi*, **ne buditì*, etc.). From an accentual point of view the inflection would have been almost identical to that of a thematic mobile present (**vèdō̲*, **vedesè̲i̲*, **vedetì*, etc.); the 1 sg. alone (**budi̯ō̲* ≠ **vèdō̲*) would have been out of alignment with the mobile pattern. The only step needed for a stative *i*-present to become canonically mobile, therefore, would have been for the 1 sg. to be remade from **budi̯ō̲* to **bùdi̯ō̲*—a straightforward change that would have received added impetus from the fact that the 1 sg. ending **-ō̲* was

before **-i̯e/o-* is contradicted by **arjan* 'plow' < **h₂érh₃-i̯e/o-* in Germanic and by innumerable examples, some with **-h₁-* (e.g., Lith. *vẽmia* 'vomit(s) < **u̯émh₁-i̯e/o-*), in Balto-Slavic. In Tocharian, where PIE **i̯* was not lost intervocalically, **-h₁i̯e/o-* could never have directly yielded the monophthong presupposed by Toch. B *-e-* and Toch. A *-a-*

56 See in detail Jasanoff 2012.

57 The "correct" 3 pl. ending in this category would have been **-rói* (cf. Ved. 3 sg. *śáye* 'lies', pl. *śére*). I assume that **-roi* was replaced by **-ntoi* in Balto-Slavic, as in other IE languages (cf. Gk. 3 pl. *kéatai*). The choice of **-i*, rather than **-r*, as the *hic et nunc* particle in the pre-BSl. middle endings is largely arbitrary.

nowhere else accented. Indeed, the mobility of the *i*-statives follows so naturally from the root stative theory that one may wonder whether the pattern **buditi* : **ne buditi*, which was phonologically regular, was a factor in providing the analogical "push" for the generalization of conjunct **-vedesi̯ei*, **-vedeti*, etc., at the expense of phonologically regular absolute **vėdesei*, **vėdeti*, etc. in the simple thematic type.

6.3.3 *Immobility in* i*-presents*

The Baltic *i*-presents that are not mobile include some whose only historical point of contact with the core mobile type is that they formerly had a zero-grade ending with **-int-* (< **-n̥t-*) in the 3 pl. Thus, e.g., Lith. *stóvi*, *-ėti* (= Latv. *stâvêt*) goes back to a perfect of the type Ved. 3 sg. *tastháu* (< **-stóh₂u*), with generalization of the accented strong stem, loss of reduplication, and extraction of **-i-* as a union vowel from the 3 pl. in **-ént(i)* ← **-r̥(s)*. More typical, however, is Lith. *tùri* (*netùri*), inf. *-ėti* 'have' (= OPr. *turri*, *turrimai*, infin. *tur(r)īt* 'id.'), a stative derivative of the root that appears in *tvérti*, pres. *tveriù* 'snatch'. The relationship of the infinitive stem *turė-* (< **tu̯rH-eh₁-*) to the underlying non-stative verb is the same as that of PSl. **jьmě-* 'have' (inf. **jьměti*) to **jęti* 'take', or of Lat. *habē-* 'have' to the root (**gʰabʰ-*) of OIr. *gaibid* 'takes'. A clue to the morphological history of *turėti* is furnished by the curiously accented OLith. 1 pl. *turimė* (Daukša; modern notation), eleven instances of which are inventoried by Skardžius (1935: 195–6). The form is not quite isolated; a handful of other accented 1 pl.'s occur, most of them found only once and of little value. The only other multiply attested 1 pl. in *-mė* is *žinomė* 'we know' (3× in Skardžius' list), supported by 2 pl. *žinotė* (1×) and ptcp. pres. *žinąs* (1×). It is natural to wonder whether the oxytonicity of these forms is a holdover of former mobility. Stang (1966: 451, note 1) rejects this possibility for *turimė*, citing the immobility of *turėti* in later Lithuanian. He is better disposed, however, to seeing real mobility in the forms of *žinóti* and its congeners *bylóti* 'speak' (OLith. 1 pl. *biłomė* (1×)) and *bijóti* 'be afraid' (OLith. ptcp. *bijąs* (4×)). Kortlandt (1985b: 236–7) is more definite on this point: "accentual mobility . . . is still preserved in OLith. (Daukša) *žinomé*, *žinoté*, from where it spread to *turimé* 'have'."

The problem with taking OLith. *žinomė*, *žinotė*, and *žinąs* as mobile, however, is that standard Lith. *žinóti* is no less immobile than *turėti*. It would not be surprising if a few mobile forms with accented endings had survived in Old Lithuanian, but it would be remarkable if the only serious evidence for final accentuation came from two verbs that were not mobile themselves.[58] It behooves us, therefore, to see if a more prosaic account of *žinomė* and *turimė*

58 I say "serious" evidence because Skardžius' list also includes seven ending-accented forms, each attested once, that do come from mobile verbs (in modern spelling *giriamė,*

is available. The starting point for *žinóti* was a nasal present **ǵn̥h₃-n(é)h₂-* (*vel sim.*), which left undisturbed would probably have yielded a pre-Baltic paradigm with **źinā̆-* in the singular (e.g., 1 sg. **źinā̆mi*) and **źin-*' everywhere else (e.g., 1 pl. **źinmē̆*, ptcp. **źinànt-*).[59] The weak stem is indirectly present in dialectal Latvian 1 pl. *zinim*, 2 pl. *zinit*, where *-i-* is the replacement of earlier zero. In Lithuanian there were two further developments: 1) the 1–3 sg. forms in **-ā̆-* were normalized to agree with the forms of an ordinary *ā*-present, with de-acuting of the stem-final vowel and substitution of the normal endings; and 2) de-acuted **-ā̆-* was extended to the plural and dual, giving, in effect, pre-Saussure's Law **žinõmē̆, *žinõtē̆*, etc. It was these latter forms, with the application of Saussure's and Leskien's Laws, that gave attested OLith. *žinomè* and *žinotè*. The archaism of *žinomè* and *žinotè* consisted not in their retention of mobility—they were never mobile in the BSl. sense—but in their retention of the accent in its etymological position on the suffix long enough to undergo Saussure's Law.

If *žinomè* and *žinotè* owe their accented endings to Saussure's Law, then the same is likely to be the case for *turimè*. We can envisage a history like the following. The original stratum of Baltic (and Balto-Slavic) *i*-presents was associated with roots that combined a non-finite stative stem in **-ē̆-* with a historically middle "root stative" present of the type described in 6.3.2. *i*-presents belonging to this historical layer (e.g., *bùdi, mìni*) were mobile because their finite forms overlapped with the canonical mobile type **vèdō̆* : **vedetì*. But other roots with stative stems in **-ē̆-* lacked the archaic averbo of roots like **bʰeudʰ-*, **men-*, etc. and did not have inherited root statives. Such roots might rather have made stative presents of the productive denominative type, with **-i̯a-* added to the stative stem: **turē̆-* 'holding' ⇒ **turē̆-i̯a-* 'be in a condition of holding, have', **galē̆-* 'strong' ⇒ **galē̆-i̯a-* 'be in a strong condition, be able', etc. Verbs in **-ē̆i̯a-*, **-ē̆ti* are generally preserved in Lithuanian when there is a clear synchronic derivational base, as, e.g., in *senė́ju*, inf. *senė́ti* 'grow old' beside *sẽnas* 'old', or *didė́ju*, inf. *didė́ti* 'get bigger' beside *dìdis* 'big', etc. But in the case of the later *turė́ti* and *galė́ti*, where there was no obvious underlying nominal stem, there was a shift to *i*-inflection. *i*-presents of this newer layer seem not to have copied the accentuation of the older forms. Instead, they retained their accent on the second syllable, so that 1 sg. **turē̆i̯ō̆*, 3 p. **turē̆i̯a(ti)*, 1 pl. **turē̆i̯amē̆*, etc. became **turi̯ō̆*, **turì(ti)*, **turìmē̆*, etc. The new 1 pl. **turìmē̆*

imamè, -imatè, keliamè, minimè, regimè, surenkamè). None of these appears to be more than sporadic.

59 Compare the account of these forms by Villanueva Svensson (2008), whose dismissal of the derivation from a nasal present is in my view premature.

was the source of Daukša's *turimè*. Here as in the case of *žinomè*, the archaic feature was not mobility, but the retention of the word-internal accent until the time of Saussure's Law.

6.4 The Slavic type in **-i-*, inf. **-iti*

6.4.1 *The "Regular" Forms*

The stative *i*-presents in Slavic were the replacement of older forms in **-ǐ-*. The inflection in **-ī-* was native to the iteratives, causatives, and denominatives with infinitives in **-iti*. These go back to older presents in **-e̯i̯e/o-* and (less often) **-i̯i̯e/o-*. There is no basis for any of the more unconventional PIE reconstructions (athematic, semithematic) proposed for these forms in the older literature, or for the secondarily athematic inflection assumed by Kortlandt (1989: 110).[60] **-e̯i̯e-* and **-i̯i̯e-* contracted to **-ī-* in pre-Slavic, at least in word-interior position if not more generally.[61] There are no inherited presents of this type in Baltic. From the fact that the Lithuanian verbs in *-yti* have *ē*-preterites, however, with *-ė-* reflecting older **-i̯i̯ā-* (e.g., *sãkė* 'said' < **sakii̯ā*(*t*), etc.), we can be reasonably sure that there was once a Baltic present stem type **sakii̯a-* (< **-e̯i̯a-*), to which the preterite **sakii̯ā-* stood in the same relation as, e.g., 3 p. pret. *jójo* 'rode' to pres. *jója*, or 3 p. pret. *senẽjo* 'grew old' to pres. *senẽja*.

The infinitives in Lith. *-yti, -ýti*, PSl. **-iti*, **-íti*, along with their associated participles in Lith. *-ytas*, *-ýtas*, were a BSl. innovation. Their origin is ultimately traceable to the denominal possessive adjective type seen in Lat. *cornūtus* 'horned' and *mellītus* 'honeyed', represented in Lithuanian by *dantýtas* 'serrated, provided with teeth' (: *dantìs* 'tooth'), *sarvúotas* 'armored' (: *sar̃vas* 'armor'), etc. Such adjectives, as convincingly analyzed by Nussbaum (1996), are "adjectivized" instrumentals in **-ih₁*, **-uh₁*, **-oh₁*, etc. Structures of the form **X-ih₁-to-*, meaning 'provided with $X_{[i\text{-stem}]}$' could give rise to back-formed presents in **-i-e̯i̯e/o-* meaning 'provide/be provided with $X_{[i\text{-stem}]}$'; the process is seen, e.g., in Lith. 3 p. *dantìja* 'provide(s) with teeth' beside *dantýtas*, and

60 It is significant that in Hittite, which is full of athematic *i*-presents of different types (cf. 3sg. *dāi*, pl. *tianzi* 'put' (1 sg. *tēḫḫi*); 3 sg. *mēmai*, pl. *mēmianzi* (1 sg. *mēmaḫḫi*)), the iterative-causatives are fully thematic; cf. *waššezzi* 'puts on (clothes)' < **u̯os-éi̯e/o-*, *lukkizzi* 'sets on fire' < **louk-éi̯e/o-*

61 How exactly the contraction rule should be formulated depends on how we interpret the masculine *i*-stem nom. pl. in **-ьje*. If nom. pl. **gostьje* 'guests' was phonologically regular, then **-e̯i̯e-* > **-ī-* would have to have been limited to cases where the second **-e-* was not in a final syllable. Cf. 5.1.7 and Olander 2015: 226.

akìja 'become(s) porous' beside *akýtas*, lit. 'having eyes' (: *akìs*), although these examples belong to a later derivational generation than the forms under discussion. From a situation where presents in **-i̯i̯e/o-* were paired with adjectives in **-ih₁to-/*-ī̯ta-* it would have been a short step to the reinterpretation of the adjectives as participles and the creation of infinitives in **-ih₁t(e)i/*-ī̯t(e)i*. When **-ei̯e/o-* eventually became **-i̯i̯e/o-* by sound change in the inherited iterative-causatives, the iterative-causatives were equipped with infinitives in **-ī̯t(e)i* as well.

Verbs in **-iti* can be found in all three accent types, but the most interesting group, with clear *o*-grade of the root and accentual homogeneity across all of Slavic, consists of AP b iteratives like **prositi*, **voditi* 'lead', **voziti* 'convey', **nositi* 'carry', and **goniti* 'chase'. Since the history of AP b was unusually complicated, it may be useful to review the accentological history of these forms within the shallow prehistory of Slavic (cf. 2.2.3.3):

		pre-Dybo's Law		post-Dybo's Law		post-Stang-Ivšić's Law
sg.	1	**pro̍šǫ*	>	**prošǫ̍*	>	**prošǫ̍*
	2	**pro̍siši*	>	**prosîši*	>	**pròsiši*
	3	**pro̍sitь*	>	**prosîtь*	>	**pròsitь*
pl.	1	**pro̍simъ*	>	**prosîmъ*	>	**pròsimъ*
	2	**pro̍site*	>	**prosîte*	>	**pròsite*
	3	**pro̍sętь*	>	**prosę̂tь*	>	**pròsętь*

Cf. R *prošú*, *prósit*; BCS (Štok.) *prȍsīm*, *prȍsī*, etc. Our task is to explain the leftmost column, from which the later forms are mechanically derived.

The comparative evidence leaves no doubt that the PIE starting point for a verb of the type *prositi* was **proḱéi̯e/o-*, with the accent on the first syllable of the suffix. Since disyllabic thematic suffixes were not subject to thematic barytonization, unchanged **proḱéi̯e/o-* would also have been the immediate input to the BSl. and Slavic accent rules.[62] The regular development of 1 sg.

62 Superficially, a case could be made *for* thematic barytonization: an early shift from **proḱéi̯e/o-* to **próḱei̯e/o-* would have generated pre-Sl. **pro̍śī-*, our *explicandum*, in the most direct way possible. But a little reflection will show why this is impossible. If **pro̍śi-* had really come from **proḱéi̯e/o-* by the BSl. process of thematic barytonization, it would have fallen together accentually with the simple thematic presents **vȅde-*, **vȅźe-*, **pȅke-* < **u̯édʰe/o-*, **u̯éǵʰe/o-*, **pékᵘe/o-*. Since the latter forms came out mobile by generalizing their conjunct forms (**nȅ vede-* ⇒ **vȅde-*, etc.), the hypothetical **pro̍sī-* would surely have come out mobile as well (**nȅ prośī-* ⇒ **prȍśī-*).

**prokéi̯oh₂* (originally trisyllabic) and 3 sg. **prokéi̯eti* (originally tetrasyllabic), with and without a prefix, would have been as follows (actual forms shown in bold):

	unprefixed (absolute)			**prefixed (conjunct)**		
	**prokéi̯oh₂*	:	**prokéi̯eti*	**ne prokéi̯oh₂*	:	**ne prokéi̯eti*
post-SPL	**pròšei̯oH*	:	**pròšei̯eti*	**ne pròšei̯oH*	:	**ne pròšei̯eti*
post-Proto-VDL	**pròšei̯oH*	:	**prošei̯etь*	**ne pròšei̯oH*	:	**ne pròšei̯eti*
			⋮			
post-Dybo's Law	**pr̀šǫ*[63]	:	**prositь*	**ne prošǫ́*	:	**ne prosîtь*
post-Stang-Ivšić's Law	**pr̀šǫ*	:	**prosîtь*	**ne* ***prošǫ́***		**ne* ***pròsitь***

The phonological outcomes are exactly the reverse of what we find in the simple thematic type. In the simple thematic type (**vede-*) the prefixed forms were mobile and the unprefixed forms were immobile; the prefixed forms "won," and **vȅdǫ*, **vȅzǫ*, **pȅkǫ*, etc. are mobile with or without a prefix. In the *-iti* verbs it was the unprefixed forms that were mobile (**pr̀šǫ* : **prosîtь*) and the prefixed forms that were immobile (**ne prošǫ́* : **ne pròsitь*). Here too the conjunct forms, shown in bold, prevailed, and the languages have not only **ne prošǫ́* (**poprošǫ́*, etc.), but also unprefixed **prošǫ́*. The histories of the two types were in this respect completely parallel.

6.4.2 AP b_1 vs. b_2

prošǫ́*, inf. **prosíti* has served as our *Musterbeispiel* of an AP b *i*-present for good reason; its reflexes, both with and without a prefix, correspond to the classic profile of an AP b present around the Slavic family. Other such **-iti* verbs include those named in 6.4.1 (voditi*, **voziti*, **nositi*, **goniti*), along with **ženiti* 'marry', **skočiti* 'jump', **služiti* 'serve', **ljubiti* 'love', and yet others, mostly iteratives. But not all, or even most, AP b verbs in **-iti* have such a straightforward profile. In the majority of AP b verbs, including most causatives (e.g., **ložiti* 'lay', **tvoriti* 'make', **vortiti* 'turn (tr.)', **mǫtiti* 'stir up') and denominatives (e.g., **seliti* 'settle', **dvoriti* 'court', **gnězditi* 'nest', **ostriti* 'sharpen'), canonical AP b outcomes are found in some areas and dialects, while in other areas the outcomes are descriptively indistinguishable from verbs of AP c. A radical solution to the problem of the "pseudo-AP c" reflexes of AP b verbs is proposed by Dybo,

63 With either analogical or phonologically regular development of **-i̯i̯ō* to **-i̯ō* and left-marginal accent unaffected by Dybo's Law.

Zamjatina, and Nikolaev (1990: 112–121). According to these scholars, the *i*-verbs traditionally assigned to AP b have to be divided into two subclasses, which they call AP b_1 and AP b_2. In AP b_1 (the *prositi*-subclass), post-Dybo's Law preforms of the type 2 sg. **prosîšь*, 3 sg. **prosîtь* were subject to Stang-Ivšić's Law in the usual way, giving a retracted (neoacute) accent on the root syllable (**pròsišь*, **pròsitь*, etc.).[64] In AP b_2, however, the retraction was more selective. In some parts of the Slavic dialect area the medial accent was retracted onto a short root but not a long one (3 sg. **lòžitь* < **ložîtь* vs. (in our notation) unchanged **vortîtь*); in other dialects it was retracted onto a long root but not a short one (unchanged **ložîtь* vs. **võrtitь* < **vortîtь*); in yet others it was retracted onto both long and short roots (**lòžitь* < **ložîtь*, **võrtitь* < **vortîtь*); and in a final group it was retracted onto neither (**ložîtь*, **vortîtь*). In those cases where Stang-Ivšić's Law did not operate—e.g., in forms like 3 sg. **ložîtь* in dialects where this did *not* undergo retraction to **lòžitь*—Dybo, Zamjatina, and Nikolaev assume that the tone on the **-ī-* was identified with the long rising neoacute that regularly developed by with the long rising neoacute that regularly developed by retraction from the endings in *i*-verbs of AP c. To take a concrete example, in the Croatian dialect of the town of Tisno, as described by Kapović 2011: 167, the PSl. AP b_2 verb **ložíti* has a 3 sg. *ložî* and 1 pl. *ložîmo*. The accent here, under the Dybo, Zamjatina, and Nikolaev approach, is in its original position:

> 3 sg. (**ložîtь* > ?)[65] **ložītь* > (no Stang-Ivšić's Law) > *ložī*; similarly *ložīš*, *ložīmo*, etc.

This dialect also has a reflex of the denominative AP c verb PSl. **lovíti* 'hunt', with exactly the same surface accentuation as **ložíti*. Here the neoacute on the stem vowel arose by retraction from the endings:

> 3 sg. **lovitь* > (Stang-Ivšić's Law) > **lovītь* > *lovī*; similarly *lovīš*, *lovīmo*, etc.

Both in this specific case and more generally, the pseudo-AP c reflexes of AP b_2 verbs (*ložī*, *ložīmo*, etc.) owe their explanation, in the Moscow view, to the dialectally conditioned failure of the AP b_2 stem vowel to give up its accent to

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64 Our usual notation is retained throughout the following discussion. As already mentioned (ch. 2, note 27), Dybo and his colleagues avoid identifying the word-internal accent in 3 sg. **prosîtь* with the "true" initial circumflex of enclinomena (**vôrnъ*, etc.).

65 Dybo et al. take the difference between what we write as **-î-* (b_1) and **-ī-* (b_2) to be original. See below.

the root, and the merger of the unshifted accent on the stem vowel with the neoacute produced on the stem vowel in genuine AP c verbs.[66]

The question that now fairly begs for an answer, of course, is—why? Why did the verbs of AP b_1, which unproblematically go back to PIE presents in **-éi̯e/o-*, apply Stang-Ivšić's Law across the board, while those of AP b_2, which also go back to PIE presents in **-éi̯e/o-*, variably failed to do so? The answer given by Dybo, Zamjatina, and Nikolaev is that the b_1 and b_2 *i*-suffixes were historically distinct morphemes with different valences. The **-i-* of AP b_1 had dominant valence, ultimately representing a PIE high tone; the **-i-* of AP b_2 was recessive, reflecting a low tone (cf. ch. 5, note 122). Under a revised understanding of Dybo's and Stang-Ivšić's Laws, the details of which need not concern us here, the difference in valence produced the observed differences between AP b_1 and b_2.

As the reader will recognize, this is no explanation at all. *Pace* Dybo et al., valency in Balto-Slavic was not an inherited phonetic feature that induced morphemes to behave in particular ways, but an abstract synchronic property of morphemes that emerged through the interaction of sound change and analogy (cf. 5.6.4). Individual valency markings can be of phonological or morphological origin; we have seen examples of both.[67] Granting for the sake of argument that valency is an appropriate way to characterize the *synchronic* difference between AP b_1 and b_2 in later Slavic, it remains to be explained where the difference in marking came from. The contrast between b_1 and b_2 shows every sign of being late. The iterative-causatives in **-éi̯e/o-* are a

66 The pseudo-AP c paradigm of **loži-* and the "true" AP c paradigm of **lovi-* would not, in theory, have been identical, since the true AP c paradigm would have retained the accent on the 1 pl. and 2 pl. endings in conservative dialects (**-imò*, **-itè*), while the corresponding pseudo-AP c forms would never have had the accent anywhere but on the theme vowel (**-ĩmo*, **-ĩte*). As pointed out by Kapović, however (2011: 112 f.), no dialect actually makes this distinction in a clear way. Nowhere is there a distinctive AP b_2 accentual paradigm; except in cases of *poluotmetnost´* (see below), the verbs of AP b_2 in a given dialect have the normal AP b_1 or normal AP c accentuation pattern appropriate to that dialect.

67 Thus, the ending of the gen. sg. in Proto-Balto-Slavic was dominant in *i-*, *u-*, and consonant stems because the PIE ending in these forms failed to meet the structural description for SPL (5.1.3); it was dominant in *ā*-stems because these forms were analogically assimilated to the *i-*, *u-*, and consonant stems (*ibid.*); and it was recessive in *o*-stems because the inherited ending in this case *did* undergo SPL, which was not analogically overridden (5.2.2.1). Similarly, the nominal suffixes **-ino-* (Slavic **-ьn-*) and **-uko-* (Slavic **-ъk-*) were respectively recessive and dominant in Proto-Slavic because of different analogical choices made in their prehistory (5.6.2–3), not because of any phonetic property in the parent language that encoded their future accentual behavior.

well-established IE category, with reflexes in almost every branch of the family; nowhere is there the slightest hint that there was a segmental or prosodic difference between, e.g., those with iterative and those with causative force. The *a priori* likelihood, moreover, that a tonal feature going all the way back to PIE would have been responsible for the failure of some AP b verbs to undergo a late sound law (Stang-Ivšić's Law) in PSl. times, but then for these same verbs to "change their mind," so to speak, and undergo the rule a few centuries later in some dialects, is not high.

6.4.3 *"Poluotmetnost'"*

The basic correctness of the scenario proposed in 6.4.1 for the derivation of the "regular" AP b paradigm **prošǫ̀*, **pròsiši*, **pròsitь*, etc. is confirmed by evidence of a wholly unexpected kind. Most Štokavian dialects of BCS, and some Čakavian dialects as well, exhibit a phenomenon whereby *i*-presents may display immobile (AP b) accentual behavior in compounds but mobile (AP c) behavior in isolation.[68] A generalized Štokavian dialect with this feature has forms like the following for *ložiti*:

	prefixed (AP b)			**unprefixed (AP c)**		
	3 SG.		INFINITIVE	3 SG.		INFINITIVE
pre-Dybo's Law Slavic[69]	**polȍžitь*	:	**polȍžiti*	**ložitь*	:	**ložiti < *-iH-tei̯*
post-Dybo's Law	**položîtь*	:	**položíti*	**ložitь*	:	**ložíti*
post-Stang-Ivšić's Law	**polȍžī(tь)*	:	**položi̋ti*[70]	**ložī(tь)*	:	**ložı̋ti*
post-Neo-Štok. retraction	***pòložī***	:	***polòžiti***	***lòžī***	:	***lòžiti***

Note the contrast between the two 3 sg. forms. Dybo, Zamjatina, and Nikolaev (1993: 33) use the terms *poluotmetnyj* and *poluotmetnost'* ("semi-retractive, semi-retractivity") to describe this phenomenon. The words refer to the fact that the accent of the simplex (e.g., 3 sg. *lòžī*, underlyingly (i.e., pre-Neo-Štokavian retraction) **ložĭ*) appears to be retracted by one syllable in the compound forms (*pòložī*, underlying **polòžī*), without displaying the full-fledged "retractivity" (i.e., movement onto the prefix) that would have been expected in an enclinomenon.[71]

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68 Unless otherwise noted, data on *-iti* verbs in BCS are taken from Kapović 2011.

69 As usual, forms are cited in an anachronistically "modern" segmental shape.

70 With the regular development of the Slavic long rising (acute) to short falling in BCS.

71 The terms are credited by Dybo et al. to the Bulgarian philologist Boris Tsonev, who uses them (in Tsonev 1903) to refer to a similar but historically distinct phenomenon in the *l*-participle and aorist in Bulgarian.

Alternations of the *lòžī* : *pòložī* type are common in short-vowel roots in BCS, both in the case of verbs assigned to AP b in Proto-Slavic (e.g., PSl. **ložĭ́ti* itself), and in verbs assigned to AP c (e.g., PSl. **lovĭ́ti*: pres. BCS 3 sg. *lòvī* (AP c), but *ùlovī* (AP b) 'catches').[72] In *loži-* we have the appearance of an AP b (immobile) present that has introduced mobility into its simplex forms; in *lovi-* we have the appearance of an AP c (mobile) present that has introduced immobility into its compounds. The two phenomena are obviously one and the same. *Poluotmetnost'* is also found in *-iti* verbs with long roots. Benić (2011: 6–8) cites unprefixed mobile 1 sg. *budîn* 'I wake up (trans.)' and *gasîn* 'I extinguish' from the Čakavian dialect of Kukljica (island of Ugljan), presupposing 3 sg. **budĭ̃tь*, **gasĭ̃tь* < **buditь̀*, **gasitь̀* (AP c);[73] but prefixed immobile 1 sg. *prebûdin* (AP b) and *ugȁsin* (AP b), with the reflex of neoacute on the root. In Slavic as a whole, **budĭ́ti* and **gasĭ́ti* pattern as mobile (AP c); see, e.g., the classification of *i*-verbs in Nikolaev 2013: 1–5.

Although *poluotmetnost'* has long been known and described,[74] it has tended to be treated as a peripheral phenomenon. Kortlandt's opinion, delivered in passing à propos of *prebûdin* and *ugȁsin*, is that the prefix in these forms "lost the stress to the root in accordance with Dybo's Law" (2011b: 359). He thus apparently subscribes to the view of Vermeer (1984: 340) that left-marginally accented verbal prefixes were originally *generally* subject to Dybo's Law. This claim runs counter to the entire logic of BSl. bilateral mobility. If correct, it would also predict PSl. pres. 1 sg. **do-vèdǫ* and aor. 3 sg. **do-vède*, with rightward movement of the accent by Dybo's Law, in place of correct **dõ-vedǫ*, **dõ-vede*.[75] A more cautious position is taken by Kapović, who, in his major

72 Careful usage distinguishes between AP a, b, and c, which are descriptive categories of Proto-Slavic, and the synchronic reflexes of these categories in the individual languages and dialects, which should properly be referred to as AP A, B, and C. The distinction will not be needed here.

73 There is, of course, no Neo-Štokavian retraction in Čakavian. The innovated BCS 1 sg. in *-im* (*-in*) has the same accentual properties as the non-1 sg. forms (e.g., 2 sg. *-iš*) on which it is analogically based. See further note 76.

74 Babik 2001: 166–7 (note 7) gives an account of the pre-Stang literature. I am indebted to Marek Majer for calling this article to my attention.

75 The operation of Dybo's Law in originally prefix-accented nominal compounds (the type **narȍdъ* 'people' < **nȁrodъ*) is, of course, an entirely different matter. The principle behind the accentuation of verbal compounds in Balto-Slavic is that the accent originally stood on the verb proper; when it was retracted onto the prefix by SPL, the prefix received a left-marginal accent which was not subject to Dybo's Law. The misconception behind the Vermeer-Kortlandt position is discussed by Babik (*op. cit.* 167–8), whose own analogical solution, however (170 ff.), is unconvincing.

study of the accentuation of *i*-verbs in Croatian, says merely that "the historical origin of this phenomenon is far from being clear" (2011: 114, note 14).

It will be noticed, however, that a simple and elegant explanation of *poluotmetnost'* in *i*-presents has fallen unlooked for into our hands. If, as we would expect, PIE **log^{h}éi̯e/o-* had the same phonological treatment as **prokéi̯e/o-* (6.4.1), the regular development of the 1 sg. and 3 sg. would have been

	unprefixed (absolute)			**prefixed (conjunct)**		
	**log^{h}éi̯oh$_2$*	:	**log^{h}éi̯eti*	**po-log^{h}éi̯oh$_2$*	:	**po-log^{h}éi̯eti*
post-SPL	**lòźei̯oH*	:	**lòźei̯eti*	**po-lòźei̯oH*	:	**po-lòźei̯eti*
post-Proto-VDL	**lòźei̯oH*	:	**loźei̯etь*	**po-lòźei̯oH*	:	**po-lòźei̯eti*
			⋮			
post-Dybo's Law	**lòžǫ*	:	**ložitь*	**položǫ́*	:	**položîtь*
post-Stang-Ivšić's Law	**lòžǫ*	:	**ložī(tь)*	**položǫ́*	:	**polòži(tь)*
post-Neo-Štok. retraction	[*lòžīm*]	:	***lòžī***	[*pòložīm*]	:	***pòložī***

The 3 sg. forms in boldface are precisely the forms that a theory of *poluotmetnost'* needs to explain. In fact, *poluotmetnost'* follows directly from our system: the unretracted simplex continues the absolute paradigm of a present in **-éi̯e/o-*, and the "semi-retracted" compounds continue the conjunct paradigm.[76] The hypothesis of separate prefixed and unprefixed accent patterns in the verbal system, introduced in ch. 4 to explain mobility in simple thematic presents, now finds dramatic direct support in Slavic *i*-presents.

Poluotmetnost' is not confined to BCS or to verbs in *-iti*. Standard Ukrainian, in Dybo et al.'s summary (1993: 32), has about a half dozen former *ě*-presents (i.e., "statives" in 3 sg. **-itь*, infin. **-ěti*) with *poluotmetnost'*, including the verbs "sit," "stand," and "lie": cf. 1 sg. *sydžú*, 3 sg. *sydýt'*, but *posýdžu, -sýdyt'; stojú, stojít'*, but *postóju, -stójit'; ležú, ležýt'*, but *poléžu, -léžyt'*; etc. The Galician dialects of

76 The loss of the inherited 1 sg. in **-ǫ* in modern BCS conceals an interesting detail. The phonologically regular 1 sg. forms, **lòžǫ* and **položǫ́*, would not have been a stable pair; in Proto-Slavic and the early Slavic dialects the addition of a prefix (**po-*) to an enclinomenon (**lòžǫ*) ought to have yielded another enclinomenon with left-marginal accent on the prefix (**pò̋ložǫ*). And indeed, analogical *pò̋ložu* (written *pó-*), *sʼò̋tvorju* (written *sʼó-*) 'I will make' and similar forms (e.g., 3 sg. aor. (< imperfect) *sʼò̋tvori*, based on the regular disyllabic enclinomenon **tvò̋ri*) are well attested in the fifteenth-century Serbian "Apostol" manuscript described by Nikolaev (2013).

Ukrainian have *poluotmetnost'* in both types of presents in *-i-*, those with infinitives in *-iti* and and those with infinitives in *-ěti*. Other South and East Slavic dialects show similar alternations, usually in *-iti* and *-ěti* verbs, but sometimes even in pure thematic presents. Since later Slavic, as Stang points out (1957: 152), is full of retraction processes, we cannot assume that all forms of preverb-sensitive accent movement in all Slavic languages are of identical origin. But it seems clear that *poluotmetnost'* in the two types of *i*-presents is a unitary phenomenon. From the *-iti* verbs, where the alternation between AP c in the simplex and AP b in compounds was phonologically regular, the pattern spread to the *-ěti* verbs, where, in the wake of the pre-Slavic substitution of **-ī-* for **-ĭ-*, the unprefixed forms outside the 1 sg. were accentually identical to the unprefixed forms of the *-iti* verbs (**bъdišĭ* = **ložišĭ*, **bъditь* = **ložitь*, etc.; cf. 6.3.2).

6.4.4 *The Origin of AP b_2*

The problem of AP b_2 is one of the major outstanding issues in Slavic accentology, and only the most general outline of a solution can be offered here. We can start with the assumption that, owing to SPL and Proto-VDL, all former iterative and causative presents in **-éi̯e/o-* at one point had a mobile absolute and an immobile conjunct paradigm.[77] In some lexical items, especially iteratives, the conjunct paradigm was generalized in the PSl. period. The verbs that eliminated the absolute : conjunct difference in this way have no pseudo-AP c forms and are not susceptible to *poluotmetnost´*; they constitute the core of the Moscow School's AP b_1.[78] The more numerous cases in which the absolute vs. conjunct distinction survived the "cut" that defined AP b_1 fall into two groups. Some, like **buditi* < **bʰoudʰéi̯e/o-*, generalized the absolute forms and became wholly mobile, forming the nucleus of the non-denominative *-iti* verbs of AP c. In the remaining cases—those destined to pattern as AP b_2—the absolute : conjunct difference was lost only after the end of the period of Slavic unity. Some dialects at this time generalized the conjunct (immobile) forms; others generalized the absolute (mobile) forms; yet others made the choice wholly or partly contingent on the prosodic characteristics of the root. In some dialects and lexical items the absolute vs. conjunct distinction left a trace in the form of *poluotmetnost´*.

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77 "Narten" causatives of the type **plṓu̯ei̯e/o-* 'cause to flow' (> PSl. **plāviti* (AP a) 'melt (tr.)') would, of course, have stood apart from the normal forms in **-éi̯e/o-*. Denominative *-iti* verbs are discussed below.

78 An exceptional case is **lomiti* 'break', which, though standardly assigned to AP b_1, is frequently—perhaps analogically—*poluotmetnoje* in BCS (*lòmī*, *pòlomī*).

Note that under this conception of AP b_2, the pseudo-AP c forms associated with AP b_2 are not "pseudo" at all. Dybo et al. claim that the AP b_2 forms that appear to be mobile are really AP b forms that failed to undergo Stang-Ivšić's Law and thus came to *resemble* AP c (cf. note 66). Our position, by contrast, is that the forms in question really *are* mobile—true AP c forms proper to the absolute paradigm.

Denominative *-iti* verbs are productive in Slavic, and their accentuation generally follows that of the underlying nominal stem: cf. **čĭ́stiti* (AP a) 'clean, make pure' : **čĭ́stъ* (AP a) 'pure'; **selĭ́ti* (AP b_2) 'settle' : **selò* (AP b) 'village'; **lovĭ́ti* (AP c) 'hunt' : **lȏvъ* (AP c) 'hunting'. The origin of this pattern no doubt goes back to the pre-BSl. period. The oldest recoverable accentuation of the suffix in Balto-Slavic was **-éi̯e/o-*, as in the iterative-causatives.[79] The characteristic BSl. innovation in denominative presents, as in derived nouns and adjectives, was copying the accentuation of the base onto the derivative (cf. 5.6.3). In verbs this meant that an oxytone derivational base "allowed" the denominative present in **-éi̯e/o-* to retain its inherited accentuation, while a barytone derivational base caused the accent of the denominative present to be transferred to the beginning of the word. An archaic instance of copying from base to derivative is seen in PSl. **ženĭ́ti* (AP b_1) 'marry', a derivative of *ženà* (AP b; pre-Dybo's Law *žèna*) 'wife' < PIE **gᵘén-h₂-* ~ **gᵘn-éh₂-*. The operative starting point was a barytonized stem **gènH-ei̯e/o-*, with root accentuation taken from the pre-Dybo's Law noun. Since the first syllable was closed, SPL would not have operated in the presence of a prefix (**ne gènH-* ⊁ ***nè genH-*), and there would have been no difference between the absolute and conjunct paradigms (post-Dybo's Law **(-)ženjǫ̀*, **(-)ženîtь*, etc.). Both paradigms would have come out immobile, perhaps explaining why **ženiti*, exceptionally for a denominative, has the profile of a b_1 verb.[80]

The establishment of the productive patterns $\text{noun}_{[\text{AP b}]} \Rightarrow \text{verb}_{[\text{AP b}_2]}$ and $\text{noun}_{[\text{AP c}]} \Rightarrow \text{verb}_{[\text{AP c}]}$ involved a substantial dose of analogy. In a derivation like post-Dybo's Law **selò* (AP b) ⇒ **selĭ́ti* (AP b_2), where the base was a noun of

79 Or in the case of *i*-stems, **-íi̯e/o-*. The usual denominative accentuation in Vedic is *-ayá-* < **-ei̯é/ó-*, although *-áya-* is also well attested (cf. Macdonell 1910: 398–9). Whether BSl. **-éi̯e/o-* was "cognate," so to speak, with Ved. *-áya-* or was shifted from older **-ei̯é/ó-* as part of a global tendency to de-accent the thematic vowel (as also seen in thematic barytonization) is hard to tell. But there are reasons to favor *-áya-* as the older variant in Vedic; cf. Kümmel 2012a: 315.

80 It is probably not a coincidence that the other denominative b_1 verbs, such as **sǫditi* 'judge', **ljubiti* 'love', **služiti* 'serve', and perhaps others, are all likewise from structures that would have resisted SPL.

the originally oxytone **però* : **pèra*/**perà* type (< **peró-*; cf. 5.4.1.2), the starting point for the verb would have been **selèi̯e*/*o-*, *without* barytonization to **sèleie*/*o-*. As in the iteratives and causatives, this gave a mobile absolute paradigm (**sèljǫ*, **selitь*) and an immobile conjunct paradigm (**-seljǫ̀*, **-selîtь*)—precisely the definition of AP b_2. The pattern was generalized to other cases where the AP b derivational base was not originally oxytone. In the mobile derivation pattern **lȍvъ* (AP c) ⇒ **lovíti* (AP c), the model came from cases where an oxytone *o*-stem was paired with a denominative present in **-éi̯e*/*o-*.[81] Here too the result would initially have been a mobile absolute (**lȍvljǫ*, **lovitь*) and an immobile conjunct paradigm (**-lovljǫ̀*, **-lovîtь*), but owing to the fact that the derivational basis was mobile it was the absolute forms that were generalized. The *poluotmetnost´* seen in BCS *lòvī* vs. *ùlovī*, like the *poluotmetnost´* in AP c verbs like **buditi* and **gasiti*, must have been analogical to the *poluotmetnost´* in AP b_2.

6.5 Athematic Presents

It might have been predicted that athematic root presents, which always originally had a closed and/or long root syllable in their strong forms (cf. PIE **gᵘhén-mi*, **u̯éḱ-mi*, **stḗu-mi*, etc.), would resist SPL and yield immobile reflexes in Balto-Slavic. This is in fact mostly the case in Old Lithuanian—notably in the inherited verbs 'to be', 'to go', and 'to put', which retain the accent on the root in the present participle and in the presence of a prefix:[82]

esmì (< **-mai̯*)[83] 'I am': 3 p. *ẽsti*, *ne ẽsti*, ptcp. *ẽsąs*
eimì 'I go': ptcp. *ẽjąs*
demì (< **dedmì* < **-mai̯*)[84] 'I put': 3 p. *dẽsti*, *pradẽsti*, etc., ptcp. *dẽdąs*
etc.

81 It is impossible to tell whether **lȍvъ* itself was such a case, since the "mobilization" of root-accented non-acute masculine *o*-stems in Slavic (5.4.1.2) obliterated the difference between structures of the type **lȍvo-* and **lovȍ-*

82 I give only forms from Daukša, in modern spelling. See further Senn 1966: 286–97.

83 Cf. 3.4.4.

84 Not, of course, a root present, but patterning as one. In modern Lithuanian, thematized *dedù*, *dẽda*, *dedą̃s* is secondarily mobile, having been immobile in Old Lithuanian. At a still earlier date it must have been mobile like the verb 'to give'; see below.

Note also the immobile transformed perfect 3 p. *liẽkti*, *atliẽkti* 'is left over' (< **loik^{u}-*), nicely paralleled by OPr. 3 p. *waist* 'know(s), 1 pl. *waidimai*, 2 pl. *waiditi* (cf. 2.3.2). In two other old cases, however, we find mobility:

> *dúomi* (< **dúodmi*) 'I give': (3 p. *dúost*, *padúost*,[85] etc.), ptcp. *duodą̃s*
> *ėmi* (< **ėdmi*) 'I eat'): ptcp. *ėdą̃s*

Curiously, neither of these latter verbs was mobile in PIE. *dúo*(*d*)*mi* goes back to a type of reduplicated present with fixed accent on the reduplication syllable (3 sg. **dédeh$_3$-ti* or **dédoh$_3$-ti*, 3 pl. **dédh$_3$-n̥ti*), while *ė́*(*d*)*mi* was originally a Narten present (**h$_1$ḗd-* ~ **h$_1$ḗd-*). The unexpected mobility of these forms in Lithuanian is confirmed by Latv. *êmu*/*êdu* 'I eat' and *duômu* 'I give', both with broken tone.

In Slavic, where there are five presents in 1 sg. **-mь* (**jesmь* 'I am', **jьmamь* 'I have', **jěmь* 'I eat', **damь* 'I will give', and (post-PSl.) **věmь* 'I know'), the most interesting cases are the three with exact Lithuanian cognates, **jesmь*, **jěmь*, and **damь*. As shown by Stang (1957: 125–8), all three had fixed accent on the final syllable prior to Stang-Ivšić's Law: **jesmь́*, **jesi̋*, **jestь́*, **jesmȍ* (**-smȍ*), **jestè*, **sǫtь́*; **jěmь́*, **jěsi̋*, **jěstь́*, . . . **jědętь́*; **damь́*, **dasi̋*, **dastь́*, . . . **dadętь́*. In the case of the copula the historical explanation for this is obvious. The Proto-BSl. paradigm had fixed initial lexical accent, generalized from the 1–3 sg. (**h$_1$és-mi, *-si, *-ti*) and the 3 pl. (**h$_1$s-énti*). In Slavic the accent moved to the ending by Dybo's Law, producing neoacute reflexes in the later languages when it was again retracted from a final yer (cf. 3 pl. Čak. *sú*, Cz. *jsou*, Pol. *są*, all < **sǭtь* < **sǫtь́*). Accentually speaking, the Slavic and Lithuanian reflexes of the copula are thus in complete agreement.

The origin of the final accent in PSl. **damь́* and **jěmь́* and the mobility of the corresponding verbs in East Baltic is less obvious. The oxytonicity in Slavic cannot have been caused by Dybo's Law, since the roots **da-* and **jěd-* were acute (cf. infin. **dáti*, **jẽ́sti* = Lith. *dúoti*, *ė́sti*). Like their Baltic cognates, therefore, the presents **damь́*, **-si̋*, etc. and **jěmь́*, **-si̋*, etc. must originally have been mobile. If we date Winter's Law after SPL—and I know of no reason not to—mobility would have developed regularly in the conjunct forms of the reduplicated present:

85 *padúost* < **pȁdō̱sti* by Saussure's Law.

	3 sg.	3 pl.
PIE (after laryngeal coloration)	**ne dédoh$_3$ti*	**ne dédh$_3$nti*
analogical *o*-reduplication	**ne dódoh$_3$ti*	**ne dódh$_3$nti*
SPL	**nĕ dodoh$_3$ti*	**nĕ dodh$_3$nti*[86]
Winter's Law	**nĕ dōdoHti*	**nĕ dōdHn̥ti*
Proto-VDL	**ne dōdoHtʲ*	**ne dōdHn̥tʲ*
laryngeal loss	**ne dō̲dō̲tʲ*	**ne dō̲dn̥tʲ*
generalization of stem **dō̲d-*	**ne dō̲(t)stʲ*	**ne dō̲dn̥tʲ*

Unlike a normal mobile present of the type **vědō̲*, **vedesʲi*, etc., where the 1 sg. had left-marginal accent, the mobile paradigm of 'to give' would have been oxytone in all three singular forms (1 sg. **dō(d)mʲ*). This was because PIE 1 sg. **déde/oh$_3$mi*, unlike the "short" 1 sg. **u̯éd^{h}oh$_2$*, had the same syllable count as the other forms and was consequently also subject to Proto-VDL.[87] The accentual agreement between PSl. **damь*, **dasʲ*, etc. and **jesmь*, **jesʲ*, etc. was thus basically coincidental, due in the one case to Proto-VDL and in the other to Dybo's Law.[88]

Not a concidence, on the other hand, was the match between **damʲь*, **dastʲь*, **dadętʲь* and **jěmʲь*, **jěstʲь*, **jědętʲь* in Slavic, and between *dúo(d)mi*, *dúost(i)*, ptcp. *duodr̥̃s* and *é(d)mi*, *ést(i)*, ptcp. *ėdr̥̃s* in Baltic. The verb 'to eat', as a historical Narten present with an acute root, should have remained immobile in Baltic and emerged with an AP a paradigm in Slavic. But the identity of stem structure with the verb 'to give' (Proto-BSl. **ē̲d-*, **dō̲d-*) led to its becoming mobile as well, evidently in BSl. times. Conversely, the verb 'to put', originally identical in stem structure with 'to give' (PIE 3 sg. **d^{h}éd^{h}e/oh$_1$ti*, pl. **d^{h}éd^{h}h$_1$n̥ti*, exactly like 3 sg. **déde/oh$_3$ti*, pl. **dédh$_3$n̥ti*), became structurally distanced from 'to give' through the failure of Winter's Law to operate before a voiced aspirate (**dod-* > **dōd-*, but **d^{h}ed^h-* > **dĕd-*). The result was that even as the originally

86 If the laryngeal was phonetically consonantal in 3 pl. **dodh$_3$n̥ti*, the sequence **-dod-* would have been a closed syllable, and SPL would have to have been analogical.

87 Proto-VDL would not, however, have applied in the 2, 3 sg. imperfect **nĕ dōdoHs*, **nĕ dōdoHt*, whence **nĕ dō(t)s(s)*, **nĕ dō(t)st* and **dõ̌(t)s(s)*, **dõ̌(t)st*, the ultimate source, probably (cf. 3.5.2, with note 70), of PSl. 2, 3 sg. aor. **dâstъ*.

88 The agreement, to be sure, would not have been phonologically regular in the 1, 2 pl. and throughout the dual, where the copula would have been subject to Dybo's Law (e.g., 2 pl. **jèste* > **jestė*) while 'give' would not have been subject to SPL and Proto-VDL (**ne dȯdh$_3$te* ↛ ***ne dodh$_3$tė*). At some point, oxytonicity must simply have been extended to the whole paradigm.

immobile **ē̱dmi* was attracted to the mobility of **dō̱dmi*, the originally mobile **dedmi* gave up its inherited accentuation and took on the immobility of **esmi*.

6.6 Beyond the Present System

6.6.1 *Mobility and Valency in the Slavic Verb*

Turning to the non-presential reaches of the verbal system, the emphasis must again be on Slavic, where the material is more abundant and more informative than in Baltic. At the segmental level, Slavic has a rich verbal morphology outside the present tense. It is easy to be misled by this richness into looking for non-existent complexity at the accentual level. In fact, the accentuation of the non-presential forms of a Slavic verb is almost entirely predictable. The overarching principle is simple: if the present system is mobile, the non-presential forms are also mobile; if the present system is immobile, the non-presential forms are immobile as well. For the non-participial forms of a mobile verb, the distribution of accents follows a pattern like the curve of a mobile present or a mobile noun (5.1.1):[89]

infinitive			x . . x̍	(**vestì*)			
supine			x̌ . . x	(**vȅstъ*)			
aorist	sg.	1	x . . x̍	(**věsъ̀*)	pl.	x . . x̍	(**věsomъ̀*)
		2	x̌ . . x	(**vȅde*)		x . . x̍	(**věstė*)
		3	x̌ . . x	(**vȅde*)		x . . x̍	(**věsę̀*)

Part of the utility of a display like this to is to remind ourselves that, as always when dealing with BSl. accentuation, it is futile to attempt an explanation of the accentuation of a particular form—the 1 sg. aorist of **vesti*, say—without considering all the other forms—in this case, both the 1 sg. aorist of other mobile verbs and the curve of the aorist and the infinitive system as a whole—that might have influenced it analogically. As already stressed, no Slavic form, however temptingly evocative of this or that familiar-looking PIE reconstruction, can be analyzed in isolation.

The accentual link between the presential and non-presential forms of a Slavic verb was an innovation, probably dating back at least in part to the BSl. period. In Vedic Sanskrit, which reflects the PIE situation, every verbal

89 Small idiosyncrasies in the accentuation of participles make it desirable to discuss declensional forms separately (6.6.4).

formation observes its own rules. The accentuation of an aorist has nothing to do with the accentuation of the corresponding present, passive, infinitive, or other forms built to the same root. In Slavic this autonomy has vanished; the accentuation, mobile or not, of a present determines the mobility of the other forms in its extended paradigm. We have already seen how, in secondary nominal derivation (5.6.4), immobile nouns (i.e., nouns with "dominant" roots) have immobile secondary derivatives, and mobile nouns (i.e., nouns with "recessive" roots) have derivatives that are either mobile themselves or accented on the suffix. The corresponding process in verbs was the transfer of the mobility or non-mobility of an inherited present stem to the infinitive, aorist, and other forms, effectively making mobility a valence. But the mechanism by which this happened in verbs could not have been the same as in nouns. In nouns the key step was the pre-SPL Derivational Accent Rule (5.6.3), which established the principle that barytone nouns had barytone derivatives and oxytone nouns had oxytone derivatives. Oxytonicity was subsequently converted by SPL and other changes to transient internal mobility, which in turn resolved into bilateral mobility or fixed accent on the pre-final syllable (4.4.2, 5.6.3). In verbs, where mobility and oxytonicity had no historical connection at all, the channel for the spread of mobility from the present to the rest of the extended paradigm could not have involved the transfer of a pre-SPL final accent from one form to another.[90]

6.6.2 *The Infinitive and Supine*

The history of the accentuation of the non-presential forms of the Slavic verb can be conveniently approached through the treatment of the infinitive and supine. The Slavic infinitive is evidently the petrified loc. sg. in **-tēi* of a proterokinetic verbal abstract in **-ti-*.[91] Such forms had final accent before they were grammaticalized as infinitives, and it is reasonable to assume that, except

90 Nor, indeed, could it have involved the copying of a pre-SPL initial accent. In nominal derivation, copying the initial accent of pre-BSl. **dʰábʰro-* into the derived abstract in **-oteh₂*, giving **dʰábʰroteh₂*, correctly generated the accentuation of PSl. (post-Dybo's Law) **dobrò̀ta* 'goodness'. But copying the initial accent of the pre-BSl. present **u̯édʰ-e/o-* into the infinitive in **-tēi* and supine in **-tum* would have incorrectly generated pre-Dybo's Law ***vèsti*, ***vèstъ* > post-Dybo's Law ***vestì*, ***vestъ́*, rather than the correct forms, pre- and post-Dybo's Law **vestì*, **vě̀stъ*.

91 As already remarked (ch. 3, note 2), it is impossible to set up a single ending for the BSl. infinitive, even setting aside the special problems posed by the Old Prussian forms. I start from **-tēi* in this chapter rather than **-t(e)i* to emphasize the fact that in Slavic, at least, the evidence points to an inherently accented ending, rather than, e.g., to the dat. sg. in **-t(éi̯)ei*, which would have triggered SPL (cf. 5.1.5–6).

in cases where there was some strong analogical reason to transfer the accent to the root (e.g., an associated Narten present), they remained oxytone in the period preceding SPL. Nothing therefore has to be explained in AP c infinitives of the type PSl. **vestì* (: pres. **vȅdǫ* ~ **vedetь̀*) or **žertì* (: pres. **žъ̏rǫ* ~ **žьretь̀*), which retain the accent in its inherited position, or in forms like PSl. **dā́ti* and **lovī́ti*, likewise AP c, where the accent is on the pre-final syllable by Hirt's Law (**dò̀H-tēi* < **doH-tḗi*, **lou̯ì̀H-tēi* < **lou̯iH-tḗi*). The distinctive Slavic (and almost certainly Balto-Slavic) innovation was to replace the accent on the infinitive ending by a lexical accent on the root in just those cases where a lexical accent stood on the root of the associated present. Thus,

> **borH-tḗi* → **bò̀rH-tēi* (PSl. **bṓrti*); cf. pre-Dybo's Law pres. **bò̀rjǫ* (older **bórH-(m)ai*)[92]
> **mag-tḗi* → **màg-tēi* (PSl. **mò̀ći* > **moći̇*); cf. pre-Dybo's Law pres. **mò̀gǫ* (< **mág-(m)ai*)[93]
> **prośiH-tḗi* or **-ìH-tēi* → **prò̀śiH-tēi* (PSl. **prò̀si̯ti* > **prosī́ti*); cf. pre-Dybo pres. **prò̀šǫ*
> **biH-tḗi* or **bìH-tēi* → **bìH-tēi* (PSl. **bī́ti*); cf. pre-Dybo's Law pres. **bi̯jǫ*

The inputs in the last two lines line would have been **prośiH-tḗi* and **biH-tḗi* if the re-assignment of the accent was earlier than Hirt's Law and **prośìH-tēi* and **bìH-tēi* if Hirt's Law was earlier than the re-assignment of the accent.[94] The mechanism would have been a simple copying process. If Hirt's Law preceded the accentual "linking," the last example would have provided an overt proportion for the others:

> pres. **bìH-i̯e/o-* : infin. **bìH-tēi* (< **biH-tḗi* by Hirt's Law) : :
> pres. **màg-(e/o-)* : infin. X, where X = **màg-tēi*

The supine, closely associated with the infinitive, is etymologically the acc. sg. in **-tum* (> BSl. **-tun*) of a verbal noun in **-tu-*.[95] Like the **-tēi* of the infinitive, the ending of the supine was historically accented (**-túm*), and verbs where there was no lexical accent in the present basically continue this situation. In

92 Cf. 6.2.2.3.

93 Cf. 6.2.1.3.

94 Both chronologies would have been possible; see, however, note 102.

95 The Slavic supine is thus cognate with the Lithuanian supine in *-tų* (*vèstų*, *sakýtų*, etc.), the Old Prussian infinitive in *-ton*, the Latin accusative of the supine in *-tum*, and the Classical Sanskrit infinitive in *-tum*.

the supine, however, accented **-túnˊ* < **-túm* was subject to final **-V̌N*(*C*) retraction, producing a left-marginal accent on the root:[96]

**u̯es-túnˊ* (< **u̯edʰ-tú-*) > **u̯ès-tun* > PSl. **vȅstъ* (cf. pres. **vȅdǫ*; AP c)
**doH-túnˊ* > **dòH-tun* > PSl. **dâtъ* (cf. pres. pre-Stang-Ivšić's Law **da*(*d*)*mь*; AP c)
**lou̯iH-túnˊ* > **loù̯iH-tun* > **-ìH-tun*[97] → **lòu̯iH-tun*[98] > PSl. **lȍvitъ* (cf. **lȍvljǫ*; AP c)

When there was a lexical accent on the root in the present, the phonologically correct treatment was overridden. As in the infinitive, the lexical accent in such cases was copied onto the root:

**borH-túnˊ* > **bòrH-tun* → **bȍrH-tun* > PSl. **bȍrtъ* (cf. infin. **bȍrti*; AP b)
**mag-túnˊ* > **màg-tun* → **mȁg-tun* > PSl. **mȍćь* > **moćь* (> **mòćь*; cf. infin. **moćі*; AP b)
**prośiH-túnˊ* > **-ìH-tun* > **-ìH-tun* → **prȍśiH-tun* > PSl. **prosítъ* (cf. infin. **prosíti*; AP b)
**biH-túnˊ* > **-bìH-tun* → **biH-tun* > PSl. **bítъ* (cf. infin. **bíti*; AP b)

The difference in accentuation between the infinitive and supine thus survives only in AP c, where it was not erased by the accent of the present.

6.6.3 *The Aorist*

The infinitive and the supine, taken together, provide a picture of how the extension of immobility from the present to the rest of the extended paradigm of a verb would have affected originally end-accented forms. We have now to see what would have happened in the opposite case, i.e., when the forms to be "linked" to the present were inherited with an initial lexical accent but the present itself was mobile, i.e., lacked a lexical accent. This is the situation that confronts us in the aorist.

With the exception of a relatively confined number of thematic and/or thematized aorists that are never mobile—the type **jьdъ* 'I went', **padъ* 'I fell', **sědъ* 'I sat down', etc. (2–3 sg. **-e*, 3 pl. **-ǫ*)—all Slavic aorists are sigmatic. The oldest stratum consists of genuine IE-type *s*-aorists, with the characteristic **-s-* added to the lengthened-grade root form; here belong **vědъ* (: **vedǫ*),

96 Note that since the supine was paradigmatically isolated and not synchronically linked to the actual acc. sg. endings **-on*, **-ān*, **-in*, and **-un*, the fact that retraction occurred in this category is another piece of evidence for final **-V̌N*(*C*) retraction as a genuine sound law.

97 **-ìH-tun* > **-ìH-tun* by the sound change that converted word-interior /ˋ/ to /ˈ/.

98 Analogical **lȍu̯iHtun* for **loù̯ìHtun* by elimination of internal mobility.

něsъ* (: **nesǫ* 'carry'), **basъ* (: **bodǫ* 'pierce'), **rěxъ* (: **rekǫ* 'say'), **žěxъ* (: **žegǫ* 'burn'),[99] and others. Less old are the numerous historical root aorists to which sigmatic morphology was secondarily applied, e.g., **merxъ* (: **mьr(j)ǫ* 'die'), **daxъ* (: **damь* 'give'), **bixъ* (: **bijǫ* 'beat'), **jęsъ* (: **jьmǫ* 'take'). Likewise of post-IE date, though in many cases as old as Balto-Slavic, are the aorists in **-axъ*, **-ěxъ*, **-ixъ*, etc. to derived verbs with infinitives in **-V̄ti*.[100] As we have seen above (4.5.1 and passim), obstruent-final roots whose proper 2–3 sg. aor. would have been a reduced monosyllable (vě*, **ně*, **rě*, etc.) substitute the historical imperfect (**vede*, **nese*, **reče*, etc.) for the etymological aorist.

The late PIE *s*-aorist was root-accented with Narten ablaut. If it had developed in isolation from the rest of the system, it would have come out with an invariant acute (AP a): 1 sg. **vḗsъ* < **u̯ē̍t-s-n̥*[101] < **u̯ḗdʰ-s-m̥*, 1 pl. **vḗsomъ* < **u̯ē̍t-s-mos* < **u̯ḗdʰ-s-mos*, etc. No such forms are actually found—a fact which has wrongly been taken as evidence that long vowels did not yield acutes in Balto-Slavic (3.5.1). The actual reason for the non-occurrence of **vḗsъ*, etc. is that after the imposition of the requirement that the aorist had to agree in mobility with the present, the inherited immobile paradigm would have to have adopted mobility. Theoretical choices for the new mobile paradigm would have been (1) 1 sg. **vo̊sъ* < **u̯ḕt-s-n̥*, 1 pl. **vo̊somъ* < **u̯ḕt-s-mos*, etc., with left-marginal accent throughout; (2) **věsъ̀* < **u̯ēt-s-ń̥*, **věsomъ̀* < **u̯ēt-s-mo̍s*, etc., with final accent throughout; or (3) a mixture of the two. Option (2) was selected; a little reflection will show why.

To understand the switch from root-accented 1 sg. **u̯ē̍t-s-n̥* (< **u̯ḗdʰ-s-m̥*), 1 pl. **u̯ē̍t-s-mos* (< **u̯ḗdʰ-s-mos*), etc. to end-accented **u̯ēt-s-ǹ̥*, **u̯ēt-s-mo̍s*, etc., we have to consider the strategies available to a language learner at the moment when the combination of a mobile present (**u̯ȅdoH*) and an immobile aorist (**u̯ē̍t-s-n̥*) ceased to be grammatically acceptable. Let us suppose that the date of "mobility linking" was later than SPL, Proto-VDL, and Hirt's Law. At that point there would already have been a number of verbs in the language with aorists that would not have required any accentual modification to "match" their mobile presents. Such a verb, for example, would have

99 The last two examples show the *ruki* treatment of **-s-* (**-s-* > **-š-* > **-x-*), which was later widely generalized.

100 Verbs with presents in **-āi̯e/o-*, **-ēi̯e/o-* and infinitives in **-āt(e)i*, **-ēt(e)i* probably had aorists in **-ā-s-*, **-ē-s-* in the Proto-BSl. period; these were replaced by *ā*-preterites in **-ā-i̯ā-*, **-ē-i̯ā-* in Baltic. Original "*a*-aorists" of the type **bьraxъ* (: pres. **berǫ*), **pьsaxъ* (: pres. *pišǫ*), etc. were a separate formation, secondarily sigmatized within Slavic; see note 107.

101 For simplicity's sake I elide the fact that the first-person endings (**-sъ* < **-som*; **-sově* < **-sou̯ēs* (*vel sim.*); **-somъ* < **-somos*) were thematized in Slavic.

been **dắti*, at this stage still **dȍH-tēi*, with a mobile present **dȏ̃d-* ~ **dōd-*ˈ (*vel sim.*; 6.5) and an aorist (> later **dắxъ*, **dắxomъ*, etc.) that at this stage would still have had the form **dȍH-s-n̥*, **dȍH-s-mos*, etc. The accent on the root in the aorist would have been inherited. But in the accentual "landscape" that obtained after the operation of Hirt's Law, a speaker could have synchronically analyzed the accent in a form like **dȍH-s-n̥* in two ways: (1) as inherent, which historically it was; or (2) as a *final* accent that was shifted onto the root by Hirt's Law, like the root accent in the infinitive (**dȍH-tēi* < **doH-tȇi*). At a time when speakers were extending the principle that mobile presents had mobile aorists and immobile presents had immobile aorists, the second analysis would obviously have imposed itself. Here and in all verbs with mobile presents and aorist stems that *could* be synchronically analyzed as having undergone Hirt's Law (e.g., pres. **pìHoH* 'drink' : aor. **pȉH-s-*; **bŭdi̯oH* 'be awake' : aor. **budȅH-s-*), the Hirt's Law analysis was adopted, and the aorist endings were interpreted as underlyingly accented. From this point it was only a short step to generating actual ending-accented forms. In a grammar where forms like **u̯ȇ̃t-s-n̥*, **u̯ȇt-s-mos*, etc. had become unacceptable because they clashed in mobility with the corresponding present, and where forms like **dȍH-s-n̥*, **dȍH-s-mos* were synchronically analyzed as /doH-s-ǹ̥, doH-s-mȍs/, the obvious repair strategy would have been to move the accent rightwards in cases where the Hirt's Law environment did not obtain, giving **u̯ēt-s-ǹ̥*, **u̯ēt-s-mȍs*, etc. The other option—changing the lexical accent on the root to a left-marginal accent (**u̯ȇ̃t-s-n̥*, **u̯ȇ̃t-s-mos*, etc.)—would have been incompatible with already existing **dȍH-s-n̥*, **pȉH-s-n̥*, **budȅH-s-n̥*, etc.[102]

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102 Since these developments, unlike the scenario proposed in 6.6.2 for the infinitive and supine, expressly presuppose Hirt's Law, it would clearly make sense to date the accentual changes in the infinitive and supine to the post-Hirt's Law period as well, thus allowing us to assign all aspects of "mobility linking" to a single moment in time. But it is not impossible that the "linking" of the suffix-accented infinitive and supine was earlier than the linking of the originally root-accented *s*-aorist.

Although the accentual bond between the present and non-presential forms was very strong, at least one "de-linking" can be documented for Proto-Slavic. Verbs with immobile presents and roots ending in a long non-acute vowel or diphthong—the *Musterbeispiel* is the properly immobile **jęti* 'take' (pres. **jьmǫ̀*, **-ěši*, etc.; AP b)—had a 3 sg. aorist that would have been realized in pre-Slavic as a non-acute long monosyllable with a lexical accent (e.g., **ème-t*, **èn-t*, **èn*, *vel sim.*). Monosyllables of this type, which could not undergo Dybo's Law because there was no following syllable to receive the shifted lexical accent, were realized with a circumflex in Slavic, falling together with true mobile forms where the circumflex was the reflex of a left-marginal accent (cf. 5.5.1, end). On the basis of the phonologically correct 3 sg. **jȇ*(*tъ*), the aorist of **jęti* was uniformly "mobilized,"

The accented endings in the aorist of mobile verbs thus arose as a response to the need for a mobile aorist paradigm compatible with the rest of the system. Forms of the type PSl. **vĕsѣ* (> post-Stang-Ivšić's Law **vẽsъ*) and their modern descendants (BCS *dònijeh*, *ùmrijeh*, etc.) have nothing to tell us about the phonological treatment of inherent long vowels in Balto-Slavic. They do, however, dramatically illustrate the dangers of trying to extract sound laws from synchronically motivated forms.

6.6.4 *Participles*

Participles, which combine properties of nouns and verbs, are open to analogical influences from both sides, and the rules relating to their accentuation in the individual languages are often complex. From our longer-scale perspective, only the briefest overview will be necessary.

We have already met the present active participle in original **-(o)nt-* (cf. especially 4.5.1), which in both Baltic (Lithuanian) and Slavic agrees in mobility with the corresponding finite forms. Mobility is manifested differently in the two branches: Lith. nom. sg. masc. *vedą̃s* (acc. *vẽdantį*) follows the "nominal" accentual curve, with the accent on the final syllable in the nom. sg., while PSl. **vědy* vs. nom. pl. **vedǫtjè*, fem. **vedǫtjì* shows the "verbal" correlation of accent position with syllable count. Slavic also has "verbal" mobility in its other consonant-stem participle, the preterite active participle in Proto-BSl. **-(v)uš-* (< PIE **-u̯os-/-u̯es-/-us-*): cf. PSl. **vědъ*, pl. **vedušè*, fem. **vedušì*. The cognate Lithuanian forms are immobile with columnar accent, even, usually, in Old Lithuanian ([*vẽdęs*], acc. *vẽdusį*, fem. *vẽdusi*).[103]

The past passive participle in PIE **-tó-* is everywhere mobile in Lithuanian (e.g., *atléistas* 'exempt', fem. *atleistà* (3); pres. *atléidžiu* 'release', ptcp. *atléidžiąs*) except when "immobilized" by Hirt's Law, as typically in cases where the infinitive stem ends in an acute vowel (e.g., *sakýtas* 'said', *minė́tas* 'mentioned'). In Slavic, the participle in **-to-*, which is restricted to roots ending in a sonant, takes its mobility cue from the present in the usual way: cf. **stə̂rtъ*, fem. **stъrtà* : **stə̏rjǫ* 'strew' (AP c), but **žę́tъ*, fem. **žę́ta* (AP a) : **žьnǫ̀* 'mow' (AP b). Mobility "agreement" is also a feature of the productive past participle in **-(e)no-*, but here there are surface complications. The suffix **-(e)no-* is underlyingly unaccented when added to immobile verbs, but receives an accent from the syllable to its left by Dybo's Law when the antevocalic form of the root is non-acute: cf. **lę̃zenъ* 'climbed' (: **lę̃zti*, **lę̃zǫ* (AP a)) vs. **borėnъ* 'assailed' (: **bőrti*, **borjǫ̀* (AP

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and mobility spread everywhere outside the present system (e.g., supine **jętъ*, *l*-participle **jętlъ*, etc.).

103 Exceptions to the pattern are discussed by Stang 1966: 459.

a/b)). In mobile verbs *-(*e*)*no-* is dominant, i.e., has an inherent penultimate accent (*-*ė̀no-*) that shifts to the ending, again by Dybo's Law (masc. **vedenъ̀* (> *-*ènъ*), fem. **vedenà*, nt. **vedenò*, pl. **vedenì*). As with all dominant suffixes, the accent in *-*ė̀no-* was leveled from earlier internal mobility in an originally oxytone paradigm (nom. sg. *-*enòs*, gen. sg. *-*ė̀nā* ⇒ nom. sg. *-*ė̀nos*, gen. sg. *-*ė̀nā*).

The "resultative" participle in *-*lo-*, which has no counterpart in Baltic, is the most salient verbal adjective in Slavic. It is also, accentually speaking, the most complex. Verbs with immobile presents have immobile *l*-participles: cf. **lě̋zlъ*, **lě̋zla*, etc. (pres. AP a); **bőrlъ*, **bőrla* (pres. AP b); **moglъ̀*, **moglà* (pres. AP b); **prosílъ*, **prosíla* (pres. AP b); etc. In mobile verbs, however, where the *l*-participle should have been mobile, we find a mixed picture. Mobility appears as expected when the root or stem preceding the *-*l-* ends in sonorant or vowel: cf. **mȋrlъ*, **mьrlà*, etc. (AP c; cf. pres. **mȕrjǫ* : **mьrjetь̀*); **dâlъ*, **dalà*, etc. (AP c; cf. pres. **dō̆d-* ~ **dōd-'*); **lȍvilъ*, **lovilà* (AP c; cf. pres. **lȍvjǫ* : **lovitь̀*).[104] When the root ends in an obstruent, however, we unexpectedly find immobility (AP a or b). Thus, e.g., **grŷzǫ* : **gryzetь̀*, inf. **grýzti* 'gnaw' is mobile, but its *l*-participle is AP a **grýzlъ*, **grýzla*, **grýzlo*, **grýzli*; **vȅdǫ* is mobile, but its *l*-participle is AP b **vedlъ̀*, **vedlà*, **vedlò*, **vedlì*. The problem of the partial non-mobility of the *l*-participle is addressed by both Dybo and Kortlandt. Dybo (1981: 254–5) explains forms like **grýzlъ* (i.e., **grù̱ź-lo-* < *-*uH-*) by Hirt's Law and supposes that from such forms immobility spread to short-vowel roots, producing **vedlъ̀*, **vedlà*, **vedlò* (AP b) for expected **vȅdlъ*, **vedlà*, **vȅdlo* (AP c). This is not convincing. Since Hirt's Law conspicuously fails to block mobility in roots ending in *-*VH-* sequences (cf. **dâlъ*, **dalà*, not **dálъ*, **dála*), it is hard to see why it should have had a blocking effect in roots ending in *-*VHC-*, or why, if mobility *was* counteracted by Hirt's Law in forms like **grýzlъ*, this should have led to its being lost in the *l*-participles, and only the *l*-participles, of deeply entrenched mobile verbs like **vesti*, **nesti*, **peći* < **pekti*, etc. Kortlandt explains **vedlъ̀*, **vedlà*, etc. by a phonological condition on a sound law—the "Late Balto-Slavic retraction of the stress from final open syllables of disyllabic word forms unless the preceding syllable was closed by an obstruent."[105] The ad hoc character of

104 Note that mobility trumps Hirt's Law in these cases; the phonologically regular treatment would have been **lȍvilъ*, **lovíla*. Compare Lith. instr. pl. *galvomìs* for expected **galvómis* (5.3.4).

105 The rule, here quoted from Kortlandt 2009: 76, is found as early as his dissertation (Kortlandt 1975: 5–6). It is an important part of his system, also being made to account for the initial accent in various mobile nominal and verbal forms (e.g., gen. sg. **vílkā*, 3 sg. aor. **véde*).

this rule, which undercuts the major generalization that oxytonicity became mobility in nominal stems, should be obvious.

Both Dybo and Kortlandt reject the possibility that the immobile *l*-participles **grȳzlo-* and **vedlȍ-* might originally have been root-accented. For Dybo the prospect of root accentuation is out of the question, since he and his school assume that PIE roots (e.g., **u̯ed^{h}-*) had inherent tonal properties (the later valences) that determined whether their derivatives would be mobile or immobile. Given its mobility in the present, the root **u̯ed^{h}-/*ved-* must, for Dybo, have had recessive valence; therefore it could not have had a root-accented derivative **u̯éd^{h}-lo-/*vèd-lo-*. Under our view of valency as a post-PIE emergent effect of sound change and analogy, however, nothing stands in the way of the simpler assumption that the *l*-participle began its career as a root-accented verbal adjective (**u̯éd^{h}-lo-*, **déh$_{3}$-lo-*, **mŕ̥-lo-*, **g$^{(h)}$rúHg$^{(h)}$-lo-*, **b^{h}órH-lo-*, **léh$_{1}$g^{h}-lo-*, etc.). There are no *l*-participles in Baltic, suggesting that their incorporation into the Slavic verbal system was relatively late—later, in particular, than the establishment of "mobility linking" between the present and other verbal categories. What made the process of mobility linking unusual in the case of the *l*-participle was that it was not taken to completion. Where the present had a lexical accent, as in **bȍrje/o-* and **lě̍ze/o-*, the *l*-participle predictably retained its etymological accent on the root (**bőrlъ*, **lȅ̋zlъ*), but when the present did *not* have a lexical accent the treatment of the *l*-participle depended on the form of the root or stem. Structures ending in a vowel or sonorant copied the mobility of the present, so that **déh$_{3}$-lo-* and **mŕ̥-lo-* (or their later decendants) gave up their lexical accent and appear as mobile **dâlo-* ~ **dalȍ-* and **mȏrlo-* ~ **mъrlȍ-*, respectively. When the root ended in an obstruent, however, mobility was exceptionally not copied, so that we have **vèdlo-* > **vedlȕ* (by Dybo's Law)[106] and **gru̯̍zlo-* > **grȳzlъ*. Whatever the reason for the

106 The Dybo's Law shift of the accent from **vèdlo-* to **vedlȕ*, **-là*, **-lȍ*, **-lì* is expressly denied by Kortlandt, who says (*ibid.*) that "the final stress in *neslό* … cannot be the result of Dybo's law in view of the quantitative difference between Slovak *mohol* 'could' < **mȍglъ* (b) and *niesol* 'carried' < **neslȕ* (c)." The Slovak forms show, according to Kortlandt, that 1) Dybo's Law did not apply in pre-Sl. **mȍglъ*, because if it had, the subsequent retraction of the accent from the yer onto the **-o-* would have lengthened it, giving a diphthong; and 2) the diphthongization in *niesol does* point to retraction from an accented yer (**neslȕ*), showing that mobile verbs like *nesti*, *vesti*, etc. had oxytone *l*-participles not by Dybo's Law, but by virtue of their being mobile. The argument is far from cogent. As pointed out in detail by Olander (2009: 209), the retraction and lengthening that Kortlandt sees in *niesol* but not *mohol* would not have been regular in the feminine (**-là*), neuter (**-lȍ*), or plural (**-lì*). If, therefore, as maintained here, pre-Sl. **mȍglo-* and **nèslo-* both underwent Dybo's Law, the phonologically regular outcomes in a Slovak dialect where lengthened **o-* was

failure of these forms to become mobile, their immobility is an archaism—a reflection, clearly, of their late integration into the system.

6.6.5 *Baltic*

Baltic offers much less material than Slavic for the accentological study of inherited extra-presential forms. Lithuanian, in particular, is conspicuously uninformative. As we have seen, infinitives, like finite verbs, have recessive accent; there is no way to tell from Lith. *vèsti* (pres. *vẽda*, *nèveda*) or *bùsti* (pres. *buñda*, *nebuñda*) that the former corresponds to a mobile present and the latter does not. Nor can anything be learned directly from the *ā*-preterite or the *ē*-preterite, the two formations, neither of them historically well understood, that replaced the aorist in Baltic.[107] Modern Lithuanian observes a simple rule: *ā*-preterites are immobile (e.g., *sùkti* 'turn', pres. *sùka*, *nèsuka*, pret. *sùko*, *nesùko*) and *ē*-preterites, insofar as they are not *ā*-preterites in disguise, are mobile (e.g., *vèsti*, pret. *vẽdė*, *nèvedė*, but *sakýti*, pret. *sãkė*, *nesãkė* < **sakijā*).[108]

Latvian appears to preserve the remains of a more Slavic-like situation. We have seen (6.1) how the infinitive, when the root is acute, retains traces of a difference between forms with sustained tone, pointing to original root

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diphthongized would have been masc. *muohol*, *niesol*, fem. *mohla*, *nesla*, nt. *mohlo*, *neslo*, etc. Precisely this distribution is attested in Central Slovak dialects (see in this connection Babik 2007). Standard Slovak secondarily generalized short/undiphthongized *moh-* but long/diphthongized *nies-*

107 The *ā*-preterite was a BSl. formation, disguised in Slavic by sigmatization to **-axъ*, **-a*, **-axomъ*, etc. and creation of a back-formed infinitive in **-ati*. This was the origin of the "second stem" in Slavic verbs of the type **pišǫ*, **pьsati* 'write', **ženǫ*, **gъnati* 'chase', etc. An association with zero grade of the root is apparent in both branches. The original form of the suffix was probably accented **-éh$_2$-*, de-acuted in Lithuanian under the influence of the present suffix **-ā-* < **-éh$_2$e/o-*. Other things being equal, an accented athematic suffix **-éh$_2$-* would have led to immobility. The extra-BSl. connections of the *ā*-preterite—and in particular, its possible link to the Italo-Celtic "*ā*-optative"—are controversial.

The *ē*-preterite may have been extracted from combinations of the type ROOT-e*h$_1$* + 'BE'—the same construction that underlies the Slavic imperfect (e.g., OCS *vedě-axъ* 'I was leading') and, strikingly, the Latin imperfect. If so, the **-eh$_1$* was properly the (de-acuted) ending of the instr. sg.; the original meaning was 'I was with (i.e., engaged in) leading'; cf. Jasanoff 1978: 123–5. Depending on how the construction was accented to begin with, the outcome could have been mobile, immobile, or both.

108 The secondary *ē*-preterite associated with verbs in *-yti* (6.4.1) shows its distinctness not only in being immobile, but also in the morphological detail that the consonant preceding the **-us-* of the preterite active participle is consistently palatalized: cf. *vẽdęs*, fem. *vẽdusi* 'having led', *gẽręs*, fem. *gẽrusi* 'having drunk'; but *sãkęs*, fem. *sãkiusi* 'having said', *prãšęs*, fem. *prãšiusi* 'having asked', with *-ius-* < **-ijus-*

accentuation (= AP a/b in Slavic; cf. Latv. *bãrt*, *malt̃* = PSl. **bőrti*, **mélti*),[109] and forms with broken tone, corresponding to suffix accentuation (= AP c in Slavic; cf. Latv. *dzeŕt*, *pît* = PSl. **žerti*, **pęti*). In the preterite too, Latvian points to a more conservative state of affairs than Lithuanian. The behavior of acute roots suggests that both preterite types could originally be both mobile and immobile in Latvian (cf. Stang 1966: 460 f.). Also tending to this conclusion is the older accentuation of the verbal abstracts in *-imas* in Lithuanian (type Mod. Lith. *mirìmas* 'dying', *degìmas* 'burning', *pirkìmas* 'purchase', etc.): accent on the root indicates an originally immobile preterite, while accent on the suffix (*-ìmas*) indicates former mobility. Following a detailed examination of the Latvian and Old Lithuanian evidence, Stang (1966: 462–7) offers a series of generalizations about the historical accentuation of the Baltic preterite, the two most interesting of which are that simple thematic presents usually had mobile preterites, and that nasal presents and presents in **-sta-* usually had immobile preterites. Since simple thematic presents are quintessentially mobile, while nasal and **-sta-* presents are a major locus of immobility, the suggestion is strong that the alignment of the present with the aorist in Slavic was echoed in Baltic by an alignment of the present with the preterite. As will be obvious, however, the potential contribution of the Baltic preterite to the study of the BSl. verbal accent has yet to be fully realized.

109 The evidence is presented by Villanueva Svensson (2011).

CHAPTER 7

Summary

The historical picture developed in the preceding chapters is in principle very simple. Balto-Slavic, according to the view presented here, started out as a more or less typical early IE daughter language, with such features as a three-way opposition of voiceless, voiced, and breathy-voiced stops; a two-way opposition of long and short vowels; three laryngeals, later lost; a free word accent, realized as high tone, in all words not specified as clitics; and a mostly columnarized accent, even in originally mobile athematic paradigms. *Not* part of the IE inheritance of Balto-Slavic were glottalic stops, accentual mobility in thematic stems, or contrastive tone distinct from the normal word accent. The BSl. evidence alleged in support of these and other non-standard features is not cogent.

7.1 From PIE to Proto-Balto-Slavic

The first and arguably most important phonological development affecting the accent in Balto-Slavic was Saussure-Pedersen's Law (SPL; 4.4), a sound law that displaced a word-interior (i.e., non-initial, non-final) accent one syllable to the left if it stood on a short open syllable.[1] The shifted accent, though originally distinct from the unshifted accent in all positions, fell together with the unshifted accent in word-internal syllables. Following this partial merger, the only kind of accent that could stand on a non-initial syllable was realized with a high tone. This was the BSl. "lexical" accent (/ˈ/), the regular continuant of the unshifted PIE accent and of the SPL-shifted accent in word-internal syllables. In initial syllables, where the inherited lexical accent remained distinct from the shifted "left-marginal" accent (/ˋ/), the latter came to be realized with low or falling pitch. Since the left-marginal accent only occurred in words that had no lexical accent, its synchronic phonological status was that of a default prominence assigned by rule to words that had no underlying accent at all. This was the origin of the much-discussed "accentlessness" of left-marginally accented forms.

1 The same retraction took place when the accent stood on a word ending of the form **-V̌N(C)*. Whether this "final **-V̌N(C)* retraction" (5.1.5) should be interpreted as a special case of SPL or as a completely separate rule is left undecided here.

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The structural effect of SPL was to create a new type of accentual mobility in which a left-marginal accent stood in paradigmatic alternation with a lexical accent on another syllable: cf. nom. pl. **gŏ̀lHu̯aHes* (Lith. *gálvos*; pre-SPL **-u̯áH-*) beside nom. sg. **golHu̯à́H* (Lith. *galvà*); 3 sg. compounded **nè̌ u̯edeti* (Lith. *nèveda*; pre-SPL **-u̯éd^{h}-*) beside uncompounded **u̯ȅdeti*; etc. *Bilateral* mobility, i.e., alternation between the left and right margins of the phonological word, became the norm following the sound change here called Proto-Vasil'ev-Dolobko's Law (Proto-VDL; 4.5). Proto-VDL positioned a lexical accent on the final syllable of tetrasyllabic and longer sequences headed by a left-marginal accent: gen. pl. **gŏ̀lHu̯aHoHon* > **golHu̯aHoHò̤n* (Lith. *galvų̃*); 3 sg. **nè̌ u̯edeti* > **ne u̯edetì* (PSl. **ne vedetì;* also **do-vedetì*; etc.). The newly productive bilateral pattern spread to cases where other alternation patterns, including "internal mobility" (4.4.3, 5.6.3), were phonologically regular. Analogical forces pressured morphologically equivalent forms in mobile paradigms (e.g., the dat. sg. across different declensions, the 3 sg. present with and without a preverb) to conform to a common "curve." A later distorting factor was Hirt's Law (4.1), which retracted the accent, even in end-accented mobile forms, onto an immediately preceding tautosyllabic **-VH-* sequence (e.g., loc. pl. **golHu̯aHsù* > **golHu̯à́Hsu*; cf. Lith. dial. *galvósu*).

Not every innovation in the position of the Proto-BSl. accent was directly or indirectly caused by sound change. Even before the operation of SPL, the accentuation of derived nominal stems was transformed by the Derivational Accent Rule (DAR; 5.6.3), a synchronic rule that assigned stem-final accent to the derivatives of oxytone (later mobile) stems and initial accent to the derivatives of barytone (later immobile) stems. The derivational patterns thus established gave rise to the later phenomenon of valency (5.6). In the verbal system, a comparable early development was "thematic barytonization" (6.2.1.4 ff.), by which the pre-SPL accent was positioned on the root syllable of present stems ending in a monosyllabic thematic suffix (**-e/o-*, **-i̯e/o-*, **-ske/o-*, **-n(C)e/o-*).

A late Proto-BSl. development, originally entirely independent of the accent, was the rise of the prosodic feature of "acuteness." Acuteness was a variable property of long vowels and diphthongs, probably realized phonetically as glottal constriction (*stød*). The rise of this feature took place in conjunction with the loss of laryngeals and thus must have been later than Hirt's Law, which was triggered by sequences containing a laryngeal. In post-laryngeal BSl. phonology, normal long vowels (i.e., vowels long by nature or by laryngeal lengthening) were marked for acuteness, while originally hyperlong vowels (i.e., long vowels arising by contraction across a laryngeal hiatus or in absolute final position) were not. The contrast became descriptively salient with the segmental merger of sequences of the type **-VRC-* (> non-acute) and **-V̄RC-*, **-VRHC-*

(> acute). At no point prior to the breakup of Proto-Balto-Slavic was there any significant interaction of acuteness with the position or character of the accent.

7.2 From Proto-Balto-Slavic to the Later Languages

Proto-Balto-Slavic had mobile and immobile stems, a distinction between lexical and left-marginal accents, and an autonomous feature of acuteness. The history of the BSl. languages after the period of unity is in large part the history of how acuteness, originally an independent variable, came gradually to be absorbed into the accent system.

On the Baltic side, Lithuanian lost the distinction between the lexical and left-marginal accents; any accented nucleus, regardless of whether it was historically of the lexical or left-marginal type, received a rising tone (> falling in standard Lithuanian) if it was marked for acuteness, and a falling tone (> rising/non-falling in standard Lithuanian) otherwise. Saussure's Law, by which an accented non-acute nucleus gave up its accent to an immediately following acute syllable (2.1.4), added a new, secondary type of mobility, effectively doubling the number of descriptive accent classes from two (mobile, immobile) to four (±mobile, ±acute). Accent-independent acuteness was lost in standard Lithuanian after Leskien's Law (2.1.3), which shortened acute final syllables. It survived longer in the Žemaitian dialects, which also partially preserved the *stød* component of acuteness.

Latvian fixed the accent in word-initial position, but was in other ways more conservative than Lithuanian. The distinction between the inherited lexical and left-marginal accents was lost on non-acute vowels, which if long received the "falling tone." On acute nuclei, however, the lexical : left-marginal distinction was retained, the lexical accent giving "sustained tone" (acc. sg. *vãrnu*) and the left-marginal accent giving "broken tone" (glottalized; acc. sg. *galv̂u*). The tonal distinctions, divorced from accent proper (ictus), were also in principle marked in non-initial/unaccented syllables. Here, however, the expected treatments were mostly obscured by secondary developments in the modern dialects.

Of Old Prussian, little can be said with certainty except that accented acute and non-acute nuclei had rising and falling intonation, respectively. Mobility was retained; indeed, Old Prussian is the only Baltic language to preserve mobility in the finite verb.

In Slavic the contrast between the lexical and left-marginal accents was maintained and elaborated. The left-marginal accent continued to be expressed by a tonal fall, both on short nuclei (gen. sg. **dòmu*; /"/ = short falling)

and on acute and non-acute long nuclei (acc. sg. **gôlvǫ* = **zîmǫ*; /ˆ/ = long falling). The loss of acuteness under the left-marginal accent is known as Meillet's Law (2.2.3.2, 2.2.7). An important Slavic innovation was the extension of the movement of the left-marginal accent in prefixed verbs (3 sg. impf. **u̯ěde*, **ně u̯ede*, **dŏ-u̯ede*) to a wider class of phrases, including, *inter alia*, combinations of preposition + noun (cf. PSl. **dŏmu*, **jь̑z domu*). The resulting sequences were subject to the synchronic version of Proto-VDL: a phonological phrase headed by an etymological left-marginal accent and extending over four or more syllables shifted its accent to the right margin (**jь̑z domu že* > **jьz domu žè*). In the later grammar of Proto-Slavic the rule was morphologized. Words beginning with a falling/left-marginal accent were treated as "enclinomena," transferring their latent accent to an enclitic, if there was one, or to the leftmost syllable of the phrase if there was not (Vasil'ev-Dolobko's Law; 2.2.2).

The two BSl. accent classes—mobile and immobile—became three in Slavic through the split of the immobile type into two. In immobile stems, the lexical accent on an acute nucleus was realized as long rising (/˝/); this was the "acute" accent, the hallmark of accent paradigm (AP) a. When the lexical accent stood on a non-acute vowel, however, it shifted one syllable to the right by Dybo's Law (2.2.4), giving AP b. Accent-independent acuteness, still present in the language at the time of Dybo's Law, was lost in its immediate aftermath. Complicating the later history of AP b was the fact that the Dybo's Law "landing site" was often a vowel—e.g., one of the reduced vowels ь or ъ—that later became unaccentable. When this was the case, the syllable that previously bore the accent was reaccented by the rule here called Stang-Ivšić's Law (2.2.3.3). The reaccented vowel received a special rising accent, the neoacute, which came to characterize AP b in the same way that the acute accent characterized AP a and the short falling and long falling ("circumflex") accents characterized the mobile accent paradigm, AP c.

Despite the long list of accent rules in Slavic, often compounded by further advancements and retractions in the individual languages, the evidence of Slavic is indispensible for a full understanding of the treatment of the PIE accent in Balto-Slavic. Nowhere is this clearer than in the domain of the verb, where Baltic is relatively uninformative and Slavic is a rich source of insight.

Appendix: Glossary of Terms

acuteness: in late Proto-Balto-Slavic and the early history of Baltic and Slavic, a contrastive accent-independent property of long vowels and diphthongs. As understood here, acuteness was a glottalic source feature, similar to the Latvian broken tone or the Danish *stød*. Indicated by underlining (*a̲*).

acute accent: in standard Lithuanian, a falling accent on a long vowel or diphthong, indicated by an acute (*á, ái, ár*) or (in liquid and nasal diphthongs beginning with a high vowel) a grave (*ìr*, *ùn*). In Proto-Slavic, a rising accent on a long vowel or diphthong, indicated by a double acute (*a̋*).

circumflex accent: in standard Lithuanian, a rising/non-falling accent on a long vowel or diphthong, indicated by a tilde (*ã, aĩ, ar̃, uõ*). In Slavic, the long falling accent typically associated with the left-marginally accented forms in mobile paradigms, indicated by an inverted breve (*â*, *ôr*).

DAR: see "Derivational Accent Rule."

Derivational Accent Rule (DAR): in early Balto-Slavic, a derivational rule stipulating that nominal derivatives copied the location of the accent from their derivational base. The derivatives of a barytone nominal stem were barytone, and the derivatives of an oxytone nominal stem were oxytone. Exx.: **u̯ér̥eh₂* ⇒ **u̯érino-*, **gᵘih₃u̯ó-* ⇒ **gᵘih₃u̯otéh₂*.

Dybo's Law: in late Proto-Slavic, a sound change that moved a lexical accent (/ ˈ /) not standing on an acute vowel one syllable to the right. Ex.: **žèna* > **ženà*.

enclinomenon: in Proto-Slavic, a phonologically unaccented word that received a left-marginal accent when there was no accompanying clitic to which an accent could be assigned by VDL.

Final **-V̌N(C)* retraction: a BSl. rule, possibly a special case of SPL, that retracted the PIE accent by one syllable if it stood on a word-final short vowel + nasal sequence. The retracted accent, if displaced to an initial syllable, was of the left-marginal type (/ ˇ /); in other positions it fell together with the lexical accent. Exx.: acc. sg. **suHnún* > **sùHnun*, **suHnukón* > **suHnu̍kon*.

Hirt's Law: a BSl. rule, later than Proto-VDL, that retracted the accent onto an immediately preceding syllable if this contained a sequence of the form **-VH-* or **-R̥H-*. The retracted accent was of the lexical type (/ ˈ /). Ex.: nom. sg. **dʰuHmós* > **dʰu̍Hmos*.

Holzer's metatony: a pre-Slavic rule by which a lexical accent on a non-acute vowel was converted to a left-marginal accent before final **-as*. Ex.: pre.SL. **nèbas* > **nĕbas* (> PSl. **nĕbo*).

Illič-Svityč's Law: in Proto-Slavic, the rule that root-accented, non-acute masculine *o*-stems became mobile (AP c). Ex.: PIE **ǵómbʰos* > PSl. **zo̍bъ* 'tooth'.

left-marginal accent: in Proto-Balto-Slavic and the early history of Baltic and Slavic, the falling accent that stood on the initially-accented forms of mobile paradigms.

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Synchronically, the left-marginal accent was assigned by default to words that were underlyingly unaccented. Indicated by a grave-macron (*ă*).

Leskien's Law: in Lithuanian, the rule that acute monophthongs, whether or not accented, were shortened in final syllables. Exx.: nom. sg. *galvà* < **gal̲vā̲*, acc. pl. *várnas* < **vȧ́rnā̲s*.

lexical accent: in Proto-Balto-Slavic and the early history of Baltic and Slavic, the rising accent that continued the PIE accent and its reflexes except when this was retracted to an initial syllable by SPL or final **-V̌N(C)* retraction. Here indicated by a vertical stroke (*ȧ*).

Meillet's Law: in Proto-Slavic, the rule that a historical acute accent was replaced by a circumflex in mobile paradigms, here interpreted to mean that acuteness was lost under the left-marginal accent. Ex.: Proto-BSl. acc. sg. **gȁl̲vān* > PSl. **gôlvǫ*.

Neo-Štokavian retraction: in standard forms of BCS, the rule that a non-initial accent of any origin is replaced by a rising accent on the preceding syllable. The new rising accent is indicated by an acute (/ ´/) on a long vowel and a grave (/ `/) on a short vowel. Exx: *gláva* < **glavȧ*, *vòda* < **vodȧ*.

neoacute accent: in late Proto-Slavic, a rising accent produced by retraction, typically by Stang-Ivšić's Law. Here indicated by a tilde (/˜/) on a long vowel and a grave on a short vowel. Exx.: 3 pl. **sǫ̃tь* < **sǫtь*, 3 sg. **jèstь* < **jestȉ*.

poluotmetnost' ("semi-retractivity"): as applied to finite verbs in various Slavic dialects, the seeming retraction of the accent by one syllable in the presence of a prefix. Ex.: BCS *lòžī* 'explains' vs. *pòložī* 'places' < pre-Neo-Štokavian retraction **ložĩ* vs. **polòžī*.

Proto-Vasil'ev Dolobko's Law (Proto-VDL): in Proto-Balto-Slavic, a historical rule that replaced an initial left-marginal accent by a final lexical accent in phonological words of more than three syllables. Ex.: gen. pl. **golHu̯aHoHȯ̀n* < **gȍlHu̯aHoHon*, 3 sg. **prośe̯i̯etȉ* < **prȍše̯i̯eti*.

Proto-VDL: see "Proto-Vasil'ev Dolobko's Law."

proto-mobility: the type of mobility that existed in Proto-Balto-Slavic following the operation of SPL and before the operation of Proto-VDL.

Saussure's Law: in Lithuanian, the rule that an acute vowel attracts the accent from a preceding non-acute syllable. Ex.: 1 sg. *vedù* < **ved̲ō̲* < **vèdō*.

Saussure-Pedersen's Law (SPL): in Balto-Slavic, a rule that retracted the PIE accent from a word-internal short open syllable. The retracted accent was of the left-marginal type (/ `/) on an initial syllable and a lexical accent otherwise. Exx.: nom. pl. **gȍlHu̯aHes* < **golHu̯áHes*, 3 sg. **prȍše̯i̯eti* < **prośe̯i̯eti*, **ne prȍše̯i̯eti* < **ne prośe̯i̯eti*.

SPL: see "Saussure-Pedersen's Law."

Stang-Ivšić's Law (also known as Stang's Law or Ivšić's Law): as used here, the late Slavic rule by which the accent was retracted from a weak yer or word-internal

circumflex, producing a neoacute on the preceding syllable. Exx.: see under "neoacute accent."

thematic barytonization: in early BSl. verbal morphology, the process by which present stems with monosyllabic thematic suffixes (**-e/o-*, **-ne/o-* (**-nCe/o-*), **-sḱe/o-*, **-i̯e/o-*) acquired initial accent. Ex.: **mḗ-i̯e/o-* ← PIE **mḗ-i̯é/ó-*.

Vasil'ev-Dolobko's Law (VDL): in Proto-Slavic, the synchronic rule that an enclinomenon "donates" its accent to an adjacent clitic. If both a proclitic and enclitic are present, a lexical accent is assigned to the enclitic; otherwise a left-marginal accent is assigned to the first proclitic. Exx.: **vě̋dǫ, *vedǫ̀ lì, *zâvedǫ, nè̋ zavedǫ, *ne zavedǫ̀ lì*.

VDL: see "Vasil'ev-Dolobko's Law."

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